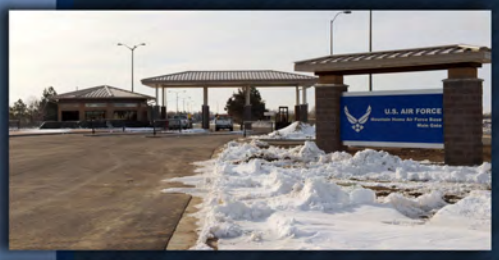
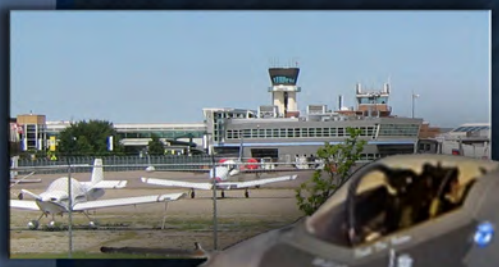
Executive Summary

United States Air Force F-35A Operational Basing Environmental Impact Statement



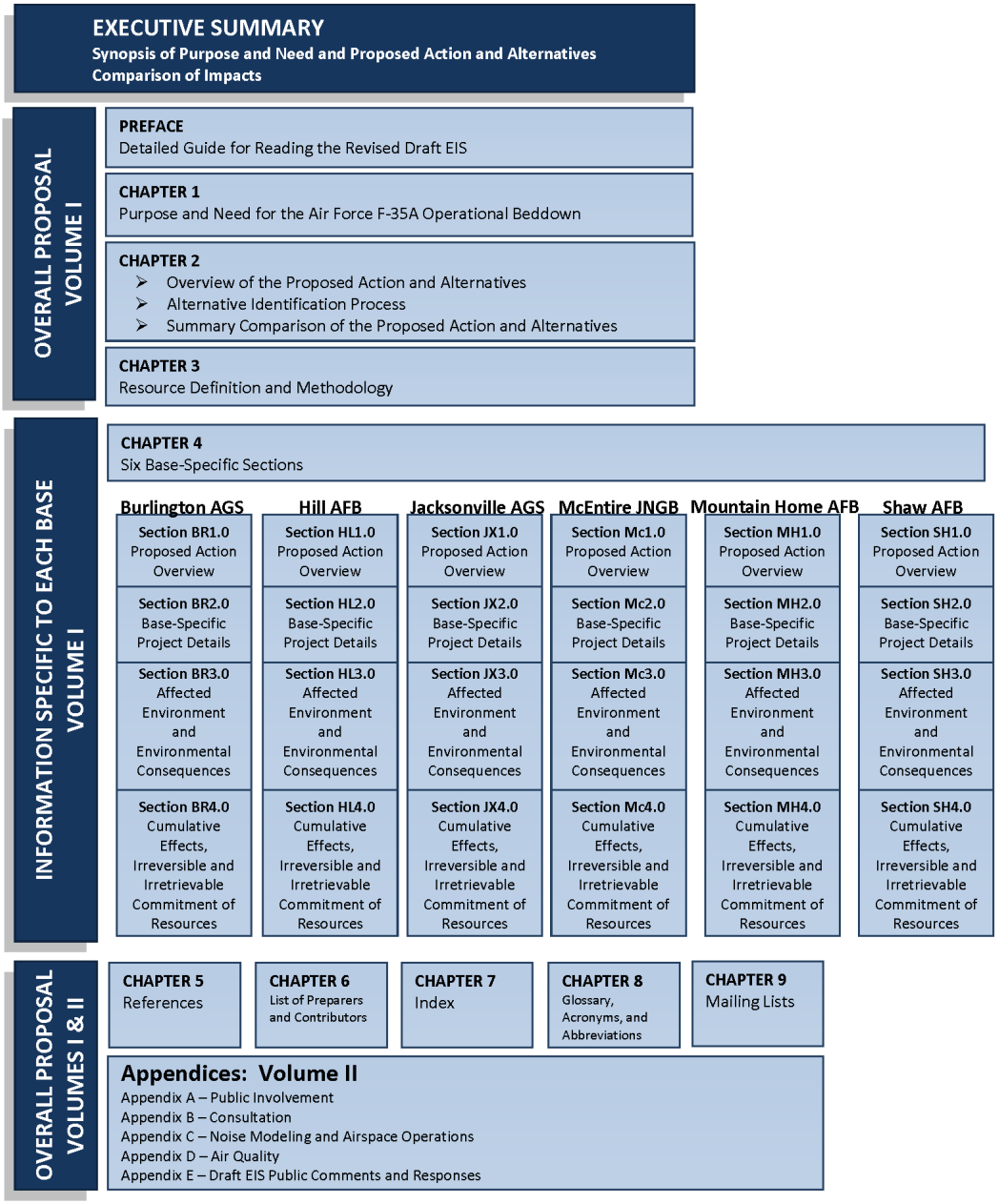


May 2013

The contents of this Executive Summary are presented below. This Executive Summary follows the pattern of the Revised Draft EIS with an initial discussion of the purpose and need for F-35A training followed by an abbreviated review of the environmental consequences at each alternative base under consideration. A table at the end of this Executive Summary compares impacts of the alternative locations. The reader is encouraged to turn to the Revised Draft EIS for a full explanation of the information presented in this Executive Summary.

How to Use This Document

Our goal is to give you a reader-friendly document that provides an in-depth, accurate analysis of the proposed action, the alternative basing locations, the no-action alternative, and the potential environmental consequences for each base. The organization of this Environmental Impact Statement, or EIS, is shown below.



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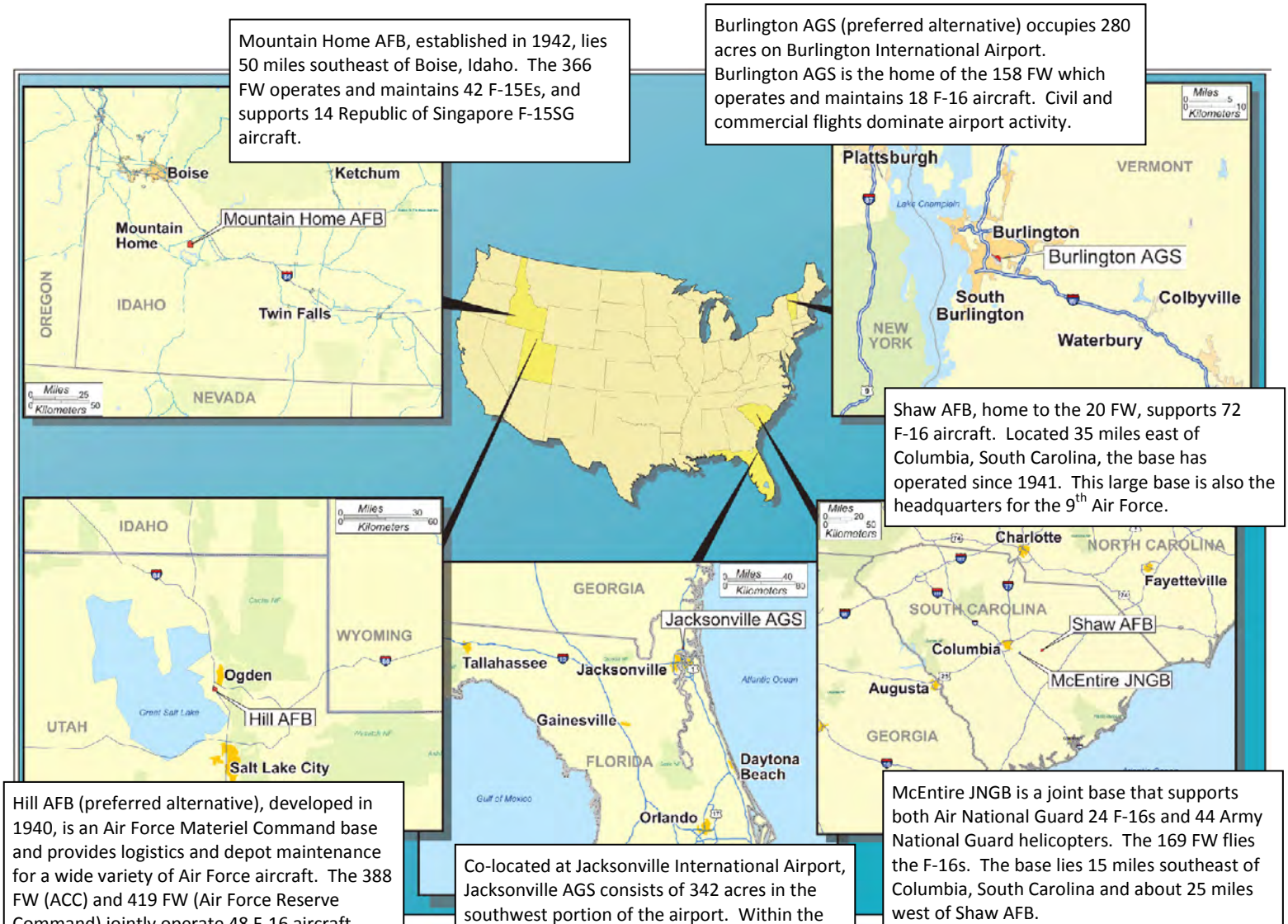


Figure ES-1. Alternative Locations for F-35A Operational Aircraft

INTRODUCTION

The Revised Draft Environmental Impact Statement (EIS) for F-35A Operational Basing analyzes the potential environmental consequences of a United States (U.S.) Air Force proposal to beddown F-35A Lightning II aircraft at one or more Air Combat Command (ACC) or Air National Guard (ANG) bases starting in 2015. New F-35A aircraft would replace aging F-16 and F-15 aircraft at the bases that currently support them and would be the initial F-35As slated for combat roles. The proposed action considers the beddown of F-35A aircraft and replacing fighter aircraft at: Burlington Air Guard Station (AGS), Vermont; Hill Air Force Base (AFB), Utah; Jacksonville AGS, Florida; McEntire Joint National Guard Base (JNGB), South Carolina; and Shaw AFB, South Carolina (Figure ES-1). The F-15 aircraft currently based at Mountain Home AFB would not be replaced.

F-35A Operational Basing Summary of Proposed Action and Alternatives					
Burlington Air Guard Station, Vermont (Preferred Alternative)	***Hill Air Force Base, Utah*** (Preferred Alternative)	***Jacksonville Air Guard Station, Florida***	***McEntire Joint National Guard Base, South Carolina***	***Mountain Home Air Force Base, Idaho***	***Shaw Air Force Base, South Carolina***
F-35A Beddown					
ANG Scenario 1: 18 F-35As	ACC Scenario 1: 24 F-35As	ANG Scenario 1: 18 F-35As	ANG Scenario 1: 18 F-35As	ACC Scenario 1: 24 F-35As	ACC Scenario 1: 24 F-35As
ANG Scenario 2: 24 F-35As	ACC Scenario 2: 48 F-35As	ANG Scenario 2: 24 F-35As	ANG Scenario 2: 24 F-35As	ACC Scenario 2: 48 F-35As	ACC Scenario 2: 48 F-35As
	ACC Scenario 3: 72 F-35As			ACC Scenario 3: 72 F-35As	ACC Scenario 3: 72 F-35As
Total Based Aircraft Change/Post-Beddown Total					
ANG Scenario 1: 0/18	ACC Scenario 1: -24/24	ANG Scenario 1: 0/18	ANG Scenario 1: -6/18	ACC Scenario 1: 24/80	ACC Scenario 1: -48/24
ANG Scenario 2: 6/24	ACC Scenario 2: 0/48	ANG Scenario 2: 6/24	ANG Scenario 2: 0/24	ACC Scenario 2: 48/104	ACC Scenario 2: -24/48
	ACC Scenario 3: 24/72			ACC Scenario 3: 72/128	ACC Scenario 3: 0/72
Change in Airfield Operations (Number/Percent)					
ANG Scenario 1: 2,613/-2.3%	ACC Scenario 1: 23,365/-50.1%	ANG Scenario 1: 1,737/-1.4%	ANG Scenario 1: 6,521/-21.0%	ACC Scenario 1: 10,667/32.7%	ACC Scenario 1: 34,427/-70.9%
ANG Scenario 2: 803/-0.7%	ACC Scenario 2: 33,935/-27.2%	ANG Scenario 2: 73/0.06%	ANG Scenario 2: 4,711/-15.2%	ACC Scenario 2: 21,334/65.4%	ACC Scenario 2: 23,760/-48.9%
	ACC Scenario 3: 44,602/-4.4%			ACC Scenario 3: 32,001/98.1%	ACC Scenario 3: 13,093/-27.1%
Change in Personnel (Number/Percent)					
ANG Scenario 1: 0/0%	ACC Scenario 1: 1,157/-5%	ANG Scenario 1: 0/0%	ANG Scenario 1: -371/-24%	ACC Scenario 1: 585/13%	ACC Scenario 1: 1, 320/-15%
ANG Scenario 2: 266/24%	ACC Scenario 2: 572/-3%	ANG Scenario 2: 249/24%	ANG Scenario 2: 0/0%	ACC Scenario 2: 1,170/36%	ACC Scenario 2: 735/-8%
	ACC Scenario 3: 13/<1%			ACC Scenario 3: 1,755/39%	ACC Scenario 3: 150/-1%
Area Affected by Construction and Cost (Acre/Cost)					
ANG Scenario 1: 0/$2.4 M	ACC Scenario 1: 3.50/$18.1 M	ANG Scenario 1: 0/$0.4 M	ANG Scenario 1: 0.41/$1.2 M	ACC Scenario 1: 3.17/$16.9 M	ACC Scenario 1: 5.48/$22.2 M
ANG Scenario 2: 0 0/$2.4 M	ACC Scenario 2: 4.27/$30.4 M	ANG Scenario 2: 0/$0.4 M	ANG Scenario 2: 0.41/$1.2 M	ACC Scenario 2: 8.98/$36.3 M	ACC Scenario 2: 5.48/$22.3 M
	ACC Scenario 3: 5.25/$40.8 M			ACC Scenario 3: 11.39/$51.9 M	ACC Scenario 3: 5.48/$22.5 M
Change in Airspace Operations (Number/Percent)					
ANG Scenario 1: 190/-7%	ACC Scenario 1: 13,188/-61%	ANG Scenario 1: 623/4%	ANG Scenario 1: 1,606/-7%	ACC Scenario 1: 4,317/13%	ACC Scenario 1: 6,850/-30%
ANG Scenario 2: 543/19%	ACC Scenario 2: 7,940/-37%	ANG Scenario 2: 1,437/10%	ANG Scenario 2: 1,313/-6%	ACC Scenario 2: 8,643/26%	ACC Scenario 2: 4,783/-21%
	ACC Scenario 3: 12,693/-13%			ACC Scenario 3: 12,963/39%	ACC Scenario 3: 2,709/-12%

ANG Scenario	ACC Scenario

1.0 PURPOSE AND NEED

1.1 PURPOSE OF THE F-35A OPERATIONAL BEDDOWN

The overall mission of the Air Force is the defense of the U.S. and fulfillment of directives of the President and the Secretary of Defense. The U.S. and international partners require fully operational, mission-ready F-35 aircraft. Pilots, personnel, and their F-35 fighters need to provide a high-threat, multi-role war fighting capability. To meet these requirements, the Air Force must develop and operate combat and support aircraft and train personnel needed for the job.

The purpose of the proposed action is to efficiently and effectively maintain combat capability and mission readiness as the Air Force faces deployments across a spectrum of conflicts while also providing for homeland defense of the U.S. Beddown and operation of the F-35A at one or more of the locations would represent one of the major steps toward this goal. Slated to purchase and deploy F-35As over the next several decades, the Air Force must ensure this initial beddown provides a solid start to the program. Additionally, this beddown action and associated training will assure availability of combat-ready pilots in the most advanced fighter aircraft in the world.

Air Combat Command (ACC), Air National Guard (ANG), and Air Force Reserve Command (AFRC) are all part of the Combat Air Forces (CAF).

1.2 NEED FOR F-35A OPERATIONAL BEDDOWN

Three factors drive the need to beddown and operate the F-35A. *First*, existing and anticipated enemy air defense systems have reached levels of effectiveness sufficient to pose a significant threat to current F-16 and F-15 aircraft. In addition, the worldwide prevalence of sophisticated air-to-air and surface-to-air missiles continues to grow, increasing the number of threats to which existing Air Force fighter aircraft are vulnerable. Implementation of the proposed beddown would provide the CAF with an aircraft capable of defeating or avoiding such threats.

The F-35A embodies critical combat capabilities to fulfill multiple mission roles.

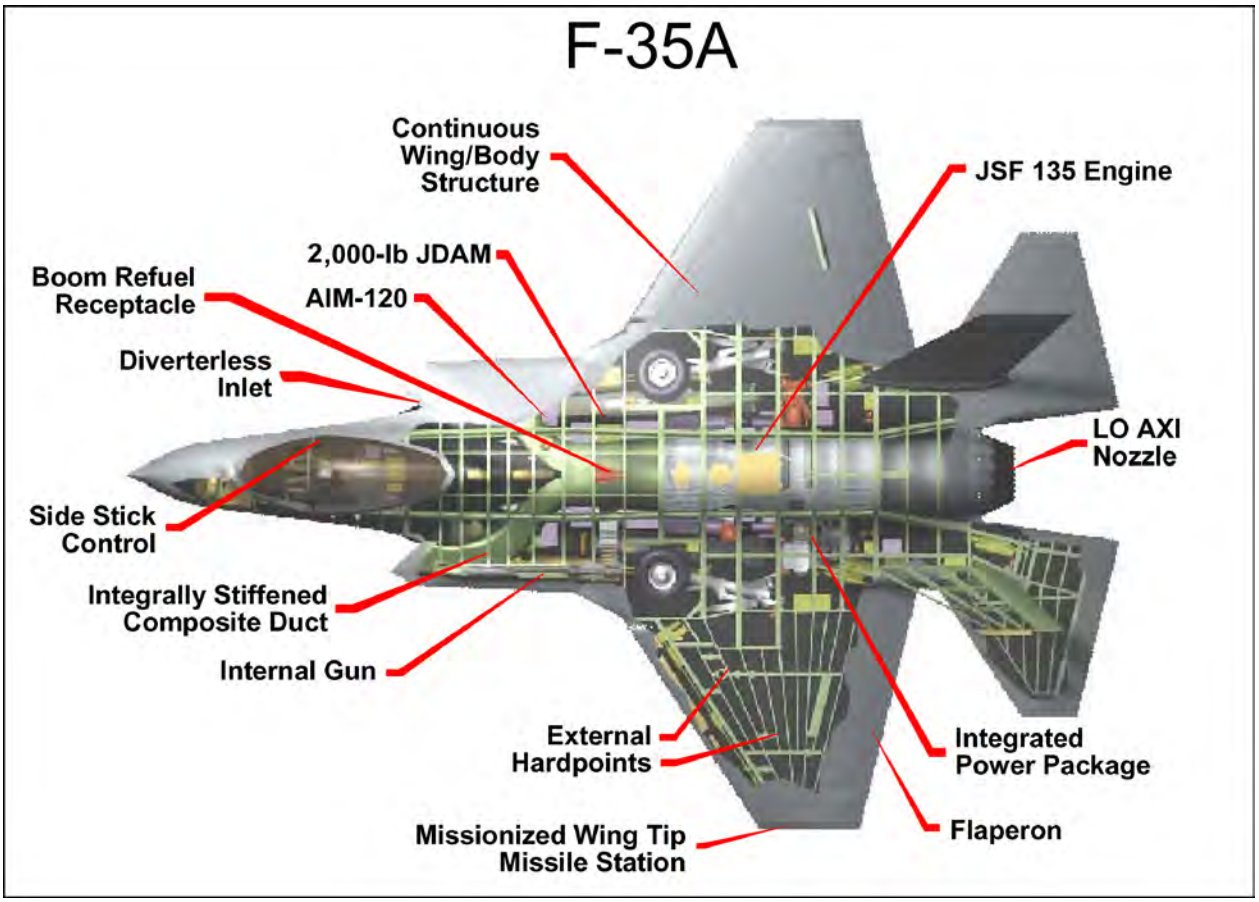
Second, the CAF needs to efficiently and effectively maintain combat capability and mission readiness. However, it faces increased difficulty in maintaining an aging F-16 and F-15 aircraft inventory. These aircraft need to be replaced as a result of attrition, decreasing service life, and the lack of additional manufacturing of F-16 and F-15 fighter aircraft. For example, the last F-16 is scheduled to be withdrawn from service around 2025. Therefore, the CAF must replace the aging aircraft and integrate the operational F-35A squadrons into the existing Air Force structure.

Third, the F-35A must support the CAF core competencies of air and space superiority, global attack, precision engagement, and agile combat support. In order for the CAF to organize, equip, train, and support F-35A aircraft to meet a full range of military operations, it needs to base the F-35A at existing locations offering compatible base infrastructure and providing ready access to existing airspace suitable for the F-35A. Beddown and operation of the F-35A at such locations form a critical priority for the Air Force.

2.0 DEVELOPMENT AND CHARACTERISTICS OF THE F-35A

In 1994, Congress and the Department of Defense (DoD) determined that the F-35 Lightning II would be developed to replace and supplement Air Force F-16 and F-15 fighter and attack aircraft. The F-35 is a supersonic, single-seat, single-engine all weather aircraft capable of performing and surviving lethal strike warfare missions. There are three variations of the F-35: F-35A, Conventional Take-Off and Landing (CTOL); F-35B, Short Take-Off and Vertical Landing (STOVL); and the F-35C, Carrier Variant (CV). The common F-35 airframe also addresses allied air forces aircraft needs. As the Air Force's premier multi-role fighter aircraft through the next several decades, the F-35A embodies critical combat capabilities to fulfill multiple missions:

- **Stealth or Low Observability** – Design features and radar-absorbent composite materials.
- **Range and Supersonic Speed** – Combat radius and speed equivalent to or greater than current legacy fighter attack aircraft.
- **Sensor Integration to Support Precision Munitions** – Threat detection and precision munitions delivery at substantially greater distances than current strike fighter aircraft.
- **Comprehensive Combat Information Systems** – Highly sophisticated avionics provide combat pilots with improved situational awareness.
- **Low Maintenance Costs** – Computerized self-tests of all systems enhance mission readiness.



3.0 ALTERNATIVE IDENTIFICATION

On August 31, 2009, the Deputy Assistant Secretary of the Air Force for Installations tasked a group of senior representatives from the Air Force Secretariat, Air Staff, and selected major commands such as ACC and Air Force Materiel Command (AFMC) to identify potential candidate bases. The Air Force identified objective criteria to assess Air Force installations' capacity to successfully support basing of the F-35A aircraft: mission, capacity, environmental, and cost. The Air Force also developed qualitative operational considerations to determine which bases should be selected for basing of the F-35A aircraft. As part of this process, the Air Force considered two configurations for the operational basing of F-35As: (1) 24, 48, or 72 F-35A aircraft for active-duty bases and (2) 18 or 24 F-35As for ANG installations.

Planning conventions used to identify candidate bases represented the best estimates at that time in 2009. While this process determined the number of bases carried forward for detailed analysis to meet projected Air Force operational requirements, the actual number of aircraft assigned and bases used will be determined in light of national strategic considerations and F-35A aircraft availability as of the completion of this EIS. Based on the evaluation of bases for each configuration and the application of military judgment factors, the Air Force identified the following candidate installations.

Three Squadron Configuration	**One Squadron Configuration**
Hill AFB	Burlington AGS
Mountain Home AFB	Jacksonville AGS
Shaw AFB	McEntire JNGB

Hill AFB

Mountain Home AFB

McEntire JNGB

Burlington AGS

Jacksonville AGS

Shaw AFB

4.0 PROPOSED ACTION

OVERVIEW OF F-35A OPERATIONAL AIRCRAFT BEDDOWN PROPOSAL

The proposed F-35A beddown would involve implementing several related elements at one or more of the six alternative locations. The following elements would occur at a base and in its associated training airspace.

Elements Affecting the Base

- Beddown of F-35A aircraft and replacement of existing legacy fighter aircraft (except at Mountain Home AFB) at one or more ACC base or ANG installation
- Conduct airfield operations for training and deployment
- Construct or modify facilities and infrastructure necessary to support F-35A aircraft
- Implement personnel changes (increases or decreases) at the base to conform to F-35A requirements

Elements Affecting Airspace

- Conduct F-35A operations in existing Restricted Areas, Military Operations Areas (MOAs), Air Traffic Control Assigned Airspace (ATCAAs), and Warning Areas, emphasizing fighter aircraft requirements, to include supersonic flight where authorized
- Employ defensive countermeasures, such as flares, in airspace authorized for their use
- Accomplish limited employment of ordnance at ranges approved for such use

The Air Force proposes to beddown F-35A operational aircraft at one or more of the six alternative locations. For each ANG unit, two beddown scenarios would apply: a total of 18 (ANG Scenario 1) or 24 (ANG Scenario 2) F-35A operational aircraft would be beddown at Burlington AGS, Jacksonville AGS, and/or McEntire JNGB. For the ACC wings, three beddown scenarios would be considered. At Hill AFB, Mountain Home AFB, and/or Shaw AFB, the scenarios consider the beddown of F-35As in increments of 24 (ACC Scenario 1), 48 (ACC Scenario 2), and 72 (ACC Scenario 3) (Table ES-1). Delivery of the first F-35As to a base could be as early as 2015 and is scheduled to be completed by 2020. Beddown would occur in phases associated with manufacture and delivery of F-35A operational aircraft. Since the F-35A replaces F-16 and F-15 fighter aircraft, the Air Force proposes to drawdown (i.e., remove) all F-16 and F-15 fighter aircraft from the selected bases (except Mountain Home AFB) as the F-35As become available after manufacturing and testing. For example, if Hill AFB receives only 24 F-35As under ACC Scenario 1, all 48 F-16s would be removed for a net decrease of 24 aircraft by completion of the action. Current aircraft would be reassigned or retired, depending upon national security needs. Air Force plans do not include replacement of the F-15E aircraft based at Mountain Home AFB with F-35As, so beddown of F-35As under any Mountain Home AFB scenario would be additive in terms of aircraft.

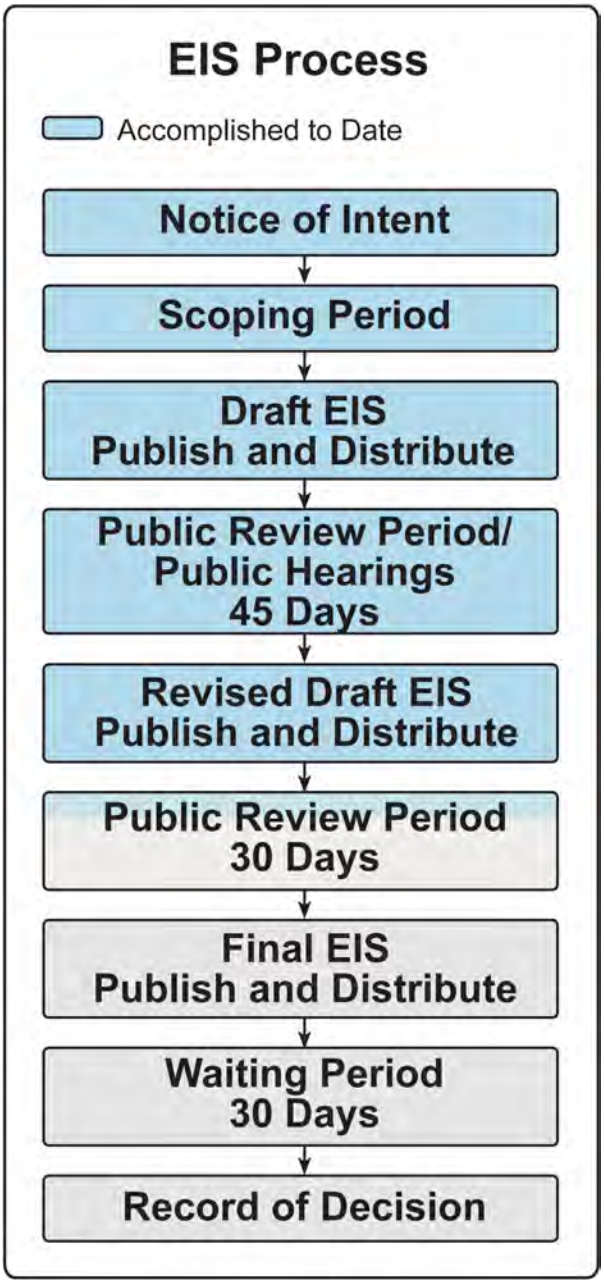
Table ES-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*		*F-35A Beddown Scenarios*					*Total*	*Net Change in Aircraft*
	Based F-16	*Based F-15C*	*ANG 1*	*ANG 2*	*ACC 1*	*ACC 2*	*ACC 3*		
Burlington AGS	18	N/A	18					18	0
				24				24	+6
Hill AFB	48	N/A			24			24	-24
						48		48	0
							72	72	+24
Jacksonville AGS	N/A	18	18					18	0
				24				24	+6
McEntire JNGB	24	N/A	18					18	-6
				24				24	0
Mountain Home AFB[1]	N/A	N/A			24			80	+24
						48		104	+48
							72	128	+72
Shaw AFB	72	N/A			24			24	-48
						48		48	-24
							72	72	0

Note: [1]No drawdown of existing aircraft would occur. The 56 based F-15Es/F-15SGs would remain and operate after an F-35A beddown.

5.0 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This Revised Draft F-35A Operational Basing EIS was prepared to comply with the National Environmental Policy Act (NEPA) and associated regulations. NEPA is the basic national charter for identifying environmental consequences from major federal actions. NEPA ensures that information on these actions and consequences is available to the public, agencies, and decision-makers before decisions are made and actions taken. NEPA (Public Law 91-190, 42 United States Code [USC] 4321-4347, as amended) was enacted to establish a national policy for the protection of the environment. It also established the Council on Environmental Quality (CEQ) to implement the provisions of NEPA and review and appraise federal programs and activities in light of NEPA policy. CEQ developed regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and outline the responsibilities of federal agencies under NEPA. Title 32 of the CFR Part 989 implements CEQ regulations with regard to Air Force actions, and defines the steps and milestones in the Environmental Impact Analysis Process (EIAP). The Air Force is the proponent for the F-35A beddown and is the lead agency for preparation of the EIS. Both the Department of the Navy (DoN) and the Federal Aviation Administration (FAA) are cooperating agencies.



After publishing a Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on December 30, 2009, the Air Force actively solicited comments on the proposed action and important issues that needed to be addressed in the EIS. This effort, known as scoping, began December 30, 2009 and ended March 1, 2010. During that time, the Air Force conducted 20 total public scoping meetings in Florida, Georgia, Idaho, Nevada, New Hampshire, New York, South Carolina, Utah, and Vermont. Almost 600 people attended these scoping meetings, including local, state, and federal elected officials, agencies, environmental groups, and members of the public. The Air Force received comments at these meetings and through the mail. In addition, the Air Force initiated consultation with potentially affected American Indian Tribes.

During the scoping period and at the scoping meetings, all interested parties were given the opportunity to review the proposed action and provide written comments and questions on the F-35A beddown. On April 13, 2012, a formal notice in the *Federal Register* announced that the Draft EIS was available for review by the public and federal, state, and local agencies. On this same date, the Air Force also announced the Draft EIS Notice of Availability (NOA) as well as the dates, times, and locations of the public meetings in over 20 local newspapers; similar advertisements of meeting dates and times were again placed in the newspapers about a week before the meetings.

Public meetings were held in 16 communities across the country and commenced on April 30, 2012 and ended on May 17, 2012. An additional hearing meeting was requested and held on June 5, 2012, and the comment review period extended another 19 days to June 20, 2012. Over 770 people attended the 16 meetings, at which 129 written comments were received and 162 oral comments recorded by stenographers. In addition, about 850 comments (which includes letters and petitions both in support of and opposition to the proposed action and alternatives) were received through the U.S. Postal Service and via email over the 64-day comment period.

The majority of written comments (over 900) were from citizens in Vermont and Maine who were not supportive of the basing action at Burlington International Airport. Commenters primarily focused on noise and its potential impacts on property values, economic stability, and human health in Winooski and South Burlington. Comments received from Maine residents believed this proposal was connected to the action proposed by the Massachusetts Air National Guard to lower the floor of the Condor Military Operations Area (MOA) and were concerned about F-35As flying at this lower altitude and the resulting noise levels. As presented in BR2.2.1, no airspace modifications are proposed and the F-35As would operate in the upper altitudes within this MOA and not at the lower ones proposed by the Massachusetts Air National Guard. There were also numerous commenters from Burlington, Vermont who supported basing F-35As at this location; the Air Force received a petition signed by 1,670 people and many letters supporting the basing action at Burlington Air Guard Station.

In general, commenters from Idaho, Florida, South Carolina, and Utah were very supportive of the basing alternatives. However, for the Mountain Home AFB alternative, several commenters believed that this action was associated with the Air Force Air Education Training Command F-35A Training Basing action proposed at Gowen Field in Boise, Idaho. This action, to base *operational* F-35A aircraft at Mountain Home AFB in Mountain Home, does not involve basing any F-35A aircraft at Gowen Field; only occasional use of the Boise airfield would occur in emergency or divert situations.

Per 32 CFR § 989.19(3)(e) the Air Force determined that it would seek additional public comments on a Revised Draft EIS. This version of the document includes responses to comments; information supplementing, improving, or modifying the analyses; and factual and typographical corrections. The public has 30 days to review and comment on this version of the EIS.

The Air Force conducted public meetings across 10 states.

6.0 BURLINGTON AGS ALTERNATIVE OVERVIEW

6.1 AIRCRAFT TRANSITION

Burlington AGS would accommodate 18 (ANG Scenario 1) or 24 (ANG Scenario 2) F-35A aircraft. The F-16 mission and 18 aircraft currently at the installation would be either reassigned or retired. Table 6-1 presents the two F-35A beddown scenarios. The Air Force identified Burlington AGS as a preferred alternative.

Table 6-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*	*F-35A Beddown Scenarios*		*Total*	*Net Change in Aircraft*
	Based F-16	*ANG 1*	*ANG 2*		
Burlington AGS	18	18		18	0
			24	24	+6

Figure 6-1. Burlington AGS Construction Projects – ANG Scenarios 1 and 2

6.2 CONSTRUCTION

A total of four facility modification and renovation projects in 2016 would be required to support beddown of the F-35As at Burlington AGS under either scenario (Figure 6-1 and Table 6-2). None of these projects would disturb new ground; all modifications would occur within existing facilities.

Table 6-2. Proposed Facility Modification for Burlington AGS

Year	*Action*	*Total Affected Area (acres)*
2016	Internal Renovation to Building 120 for F-35A Simulator	0
2016	Provide 270DC, 28DC Power in Aircraft Shelter Parking Areas (Buildings 130, 131, 132, 150, 360)	0
2016	Provide Secure/Classified Upgrades in Rooms 004/004A, Building 140	0
2016	Provide a Secure Parts Storage Area, Building 70 Warehouse	0
Total	**Cost: $4,690,000**	**0**

6.3 AIRFIELD OPERATIONS

The F-35As would employ similar take-off and landing procedures as currently used by the F-16s at Burlington AGS. However, the new aircraft would fly fewer closed patterns overall, thereby reducing total airfield operations (Table 6-3). Flight profiles would also vary somewhat from the F-16s, but the F-35As would adhere to existing restrictions and avoidance procedures. No flying between 10:00 p.m. and 7:00 a.m. would be planned for the F-35As, although civil and commercial aircraft at Burlington International Airport (IAP) would continue to fly during this period.

Table 6-3. Comparison of ANG Scenarios – Airfield Operations

Burlington ANG Scenario	*ANG Scenario 1*	*ANG Scenario 2*
Based F-16	-8,099	-8,099
Other Military Aircraft	468	468
Transients[1]	6,264	6,264
F-35A	5,486	7,296
Burlington International Airport	97,393	97,393
Total	**109,611**	**111,421**
Percent Change from Baseline	**-2.3%**	**-0.7%**

Note: [1]Transients include visiting KC-135R, C-130, and C-9A; other based military includes helicopters.

6.4 PERSONNEL

The Air Force expects that existing staffing levels would be sufficient to support operation and maintenance of 18 F-35As at Burlington AGS (ANG Scenario 1). Beddown of six more F-35As (24 total – ANG Scenario 2) would require 266 (24 percent increase) more military personnel (Table 6-4).

Table 6-4. Proposed Military Personnel Changes: Burlington AGS

	Baseline	*Proposed Scenario*		*Per Scenario Net Change*	
	F-16 Personnel	*F-35A Personnel*			
		ANG 1	ANG 2	ANG 1	ANG 2
Total	**1,130**	**1,130**	**1,396**	**0**	**+266**

6.5 BURLINGTON AGS ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. Burlington IAP is a joint-use airfield that currently accommodates over 97,000 commercial and civilian aircraft operations each year. Combined with based F-16s, as well as other based and transient military aircraft, these operations produce noise as reflected by the baseline 65 decibel (dB) Day-Night Average Sound Level (DNL) contour depicted in Figure 6-2. This figure overlays the 65 dB DNL contours for both scenarios relative to the contours presented in the 2011 Noise Compatibility Program, the 2011 Part 150 forecast used for land use and zoning purposes by the City of Burlington. As these contours show, ANG Scenarios 1 and 2 noise affects slightly narrower, but longer areas relative to the Noise Compatibility Program contours.

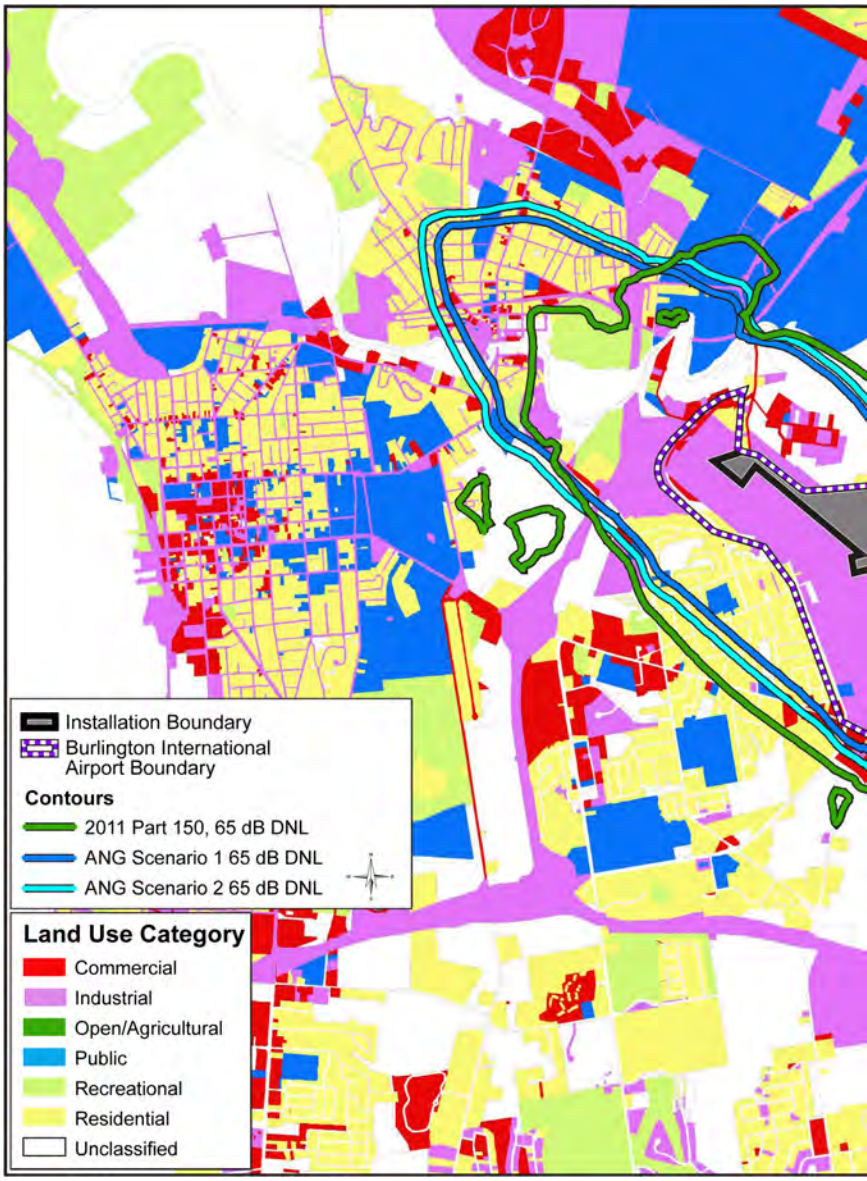


Figure 6-2. Burlington AGS Comparison of Noise Compatibility Program 2011 Projected Noise Contours and Projected 65 dB DNL Noise Contours under Both ANG Scenarios

Under both scenarios, the overall area affected by noise levels of 65 dB DNL and greater would increase as would residential land use subject to noise levels 65 to 85 dB DNL (Table 6-5). Some residential areas would be newly subjected to noise above 65 dB DNL.

Table 6-5. Change in Acres of Defined Residential Land Use Within the 65 to 85 dB DNL Contour Area at Burlington AGS

	Baseline (acres)	*Projected (acres)*	*Change (acres)*
ANG Scenario 1	371	564	+193
ANG Scenario 2	371	667	+296

Table 6-6 compares baseline conditions to ANG Scenario 1 and ANG Scenario 2 acreage, population, and households affected by noise levels of 65 dB DNL and greater at and around the installation. As Table 6-6 shows, more acres, people, and households would be affected by noise levels of 65 dB DNL and greater under the ANG Scenarios when compared to baseline.

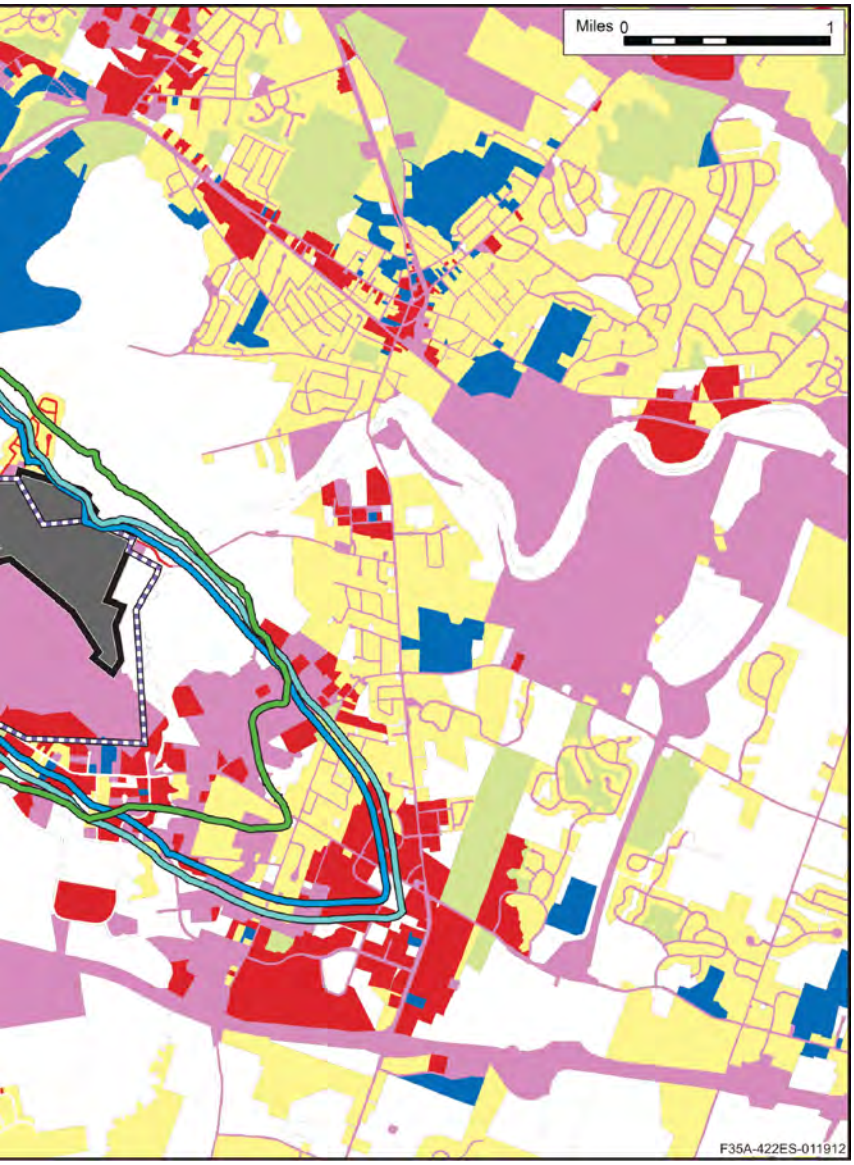


Table 6-6. Off-Base Noise Exposure under ANG Scenarios 1 and 2 for Burlington AGS (Proposed/Baseline)

Contour Band (dB DNL)	*Acreage*	*Population*	*Households*
ANG Scenario 1			
65 – 70	1,280/1,248	4,330/2,808	1,893/1,219
70 – 75	671/483	1,740/1,211	810/505
75 – 80	250/187	586/574	257/238
80 – 85	51/45	7/9	3/4
85+	0/0	0/0	0/0
Total	**2,252/1,963**	**6,663/4,602**	**2,963/1,966**
ANG Scenario 2			
65 – 70	1,438/1,248	4,593/2,808	1,975/1,219
70 – 75	790/483	2,356/1,211	1,090/505
75 – 80	318/187	756/574	339/238
80 – 85	89/45	14/9	6/4
85+	0/0	0/0	0/0
Total	**2,635/1,963**	**7,719/4,602**	**3,410/1,965**

Noise effects also include impacts of individual overflights. As presented in Table 6-7, the F-35A would be louder than the F-16s as measured by single overflight metrics: Sound Exposure Level [SEL] and Maximum Sound Level (L_{max}).

SEL is a composite metric that represents both the intensity of sound and its duration. SEL does not directly represent the sound level heard at any given time. Rather, it provides a measure of the net impact of an entire acoustic event. Mathematically, it represents the sound level of a constant sound that would, in one second, generate the same acoustic energy in the actual time varying noise events. L_{max} is used to define peak noise levels. L_{max} is the highest sound level measured during a single noise event in which the sound level changes with time.

Table 6-7. SEL and L_{max} Comparison for Burlington AGS

Condition	*Based F-16C[1, 2]*				*F-35A[2, 3]*			
	SEL (dBA)	*L_{max} (dBA)*	*Power (%NC)*	*Speed (kts)*	*SEL (dBA)*	*L_{max} (dBA)*	*Power (%ETR)*	*Speed (kts)*
Afterburner Assisted Take-off[4] (1,000 feet AGL)	**101**	**94**	95%	300	**118**	**115**	*100%*	*300*
Military Power Take-off (1,000 feet AGL)	**101**	**94**	95%	255	**118**	**115**	*100%*	*300*
Holddown on Departure (2,000 feet AGL)	**N/A**	**N/A**	N/A	N/A	**88**	**83**	*40%*	*300*
Arrival (non-break, through 1,000 feet AGL, gear down[5])	**82**	**73**	84%	140	**99**	**95**	*40%*	*180*
Overhead Break (downwind leg, 2,000 feet AGL, gear down)	**N/A**	**N/A**	N/A	N/A	**93**	**87**	*40%*	*200*
Low Approach and Go (downwind leg, 1,500 feet AGL, gear down)	**75**	**66**	84%	200	**95**	**91**	*40%*	*210*

Burlington AGS nominal elevation = 335 feet MSL; Weather: 66°F, 67% Relative Humidity; and SEL = Sound Exposure Level; L_{max} = Maximum (instantaneous) Sound Level; dBA = A-weighted decibel; NC = Engine core revolutions per minute; kts = knots; ETR = Engine thrust request.
Notes: All numbers are rounded. [1]Modeled F-16C with F110-GE-100 engine. [2]F-16 aircraft spend 90 percent of take-off in afterburner versus the 5 percent by the F-35. [3]Modeled with reference acoustic data for an F-35A. [4]Power reduced from afterburner to military power prior to reaching 1,000 feet AGL. [5]F-16C values reflect gear up conditions.

Air Quality. Under ANG Scenario 1, emissions would decrease for six of the seven pollutant categories; ANG Scenario 2 would involve decreases in four of the seven pollutants. For the other categories, minor increases would result. Neither ANG Scenario 1 nor 2 would introduce emissions that would deteriorate regional air quality; the area would remain in attainment for all federal and state air quality standards. As an example, Table 6-8 presents the emissions from operations under ANG Scenario 2, which involves the most aircraft and operations, and generates the greatest emission quantities.

Table 6-8. Proposed Annual Operational Emissions under ANG Scenarios 1 and 2 at Burlington AGS

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[1]
ANG Scenario 1							
Aircraft	13.11	33.52	0.43	17.93	1.18	1.18	12,354
Engine Runups	0.40	0.09	0.01	0.11	0.01	0.01	76.25
Aerospace Ground Equipment (AGE)[2]	3.86	3.44	0.21	0.97	0.31	0.30	897
Privately-Owned Vehicles (POVs)	52.62	1.91	2.35	0.04	0.10	0.10	1,880
Total Annual ANG Scenario 1 Emissions	**69.98**	**38.96**	**3.00**	**19.04**	**1.60**	**1.59**	**15,207**
Baseline Annual Emissions	153.80	48.42	19.11	8.37	8.55	7.80	18,225
Net Change	***-83.82***	***-9.47***	***-16.11***	***10.67***	***-6.95***	***-6.21***	***-3,018***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**
ANG Scenario 2							
Aircraft	17.49	45.13	0.57	24.02	1.58	1.58	16,556
Engine Runups	0.53	0.13	0.01	0.15	0.01	0.01	104
AGE[2]	5.13	4.57	0.28	1.29	0.42	0.40	1,194
POVs	65.97	2.40	2.95	0.05	0.13	0.13	2,357
Total Annual ANG Scenario 2 Emissions	**89.12**	**52.23**	**3.82**	**25.51**	**2.13**	**2.12**	**20,211**
Baseline Annual Emissions	153.80	48.42	19.11	8.37	8.55	7.80	18,225
Net Change	***-64.68***	***3.80***	***-15.29***	***17.14***	***-6.42***	***-5.68***	***1,986***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**

Notes: CO=carbon monoxide; NO_x=nitrogen oxide; VOCs=volatile organic compounds; SO_x=sulfur oxide; PM=particulate matter; and CO_2e=equivalent carbon dioxide.

[1] $CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310)$, (40 CFR 98, Subpart A, Table A-1) in metric tons per year.

[2] With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single-engine aircraft, and an extensive, rigorous testing program. Overall, the risks of a mishap are not expected to increase substantially

Biological Resources. Under ANG Scenarios 1 and 2, facility projects would produce no surface disturbance. Noise from aircraft operations would increase, but the wildlife in the area of Burlington IAP have become habituated to it. As such, no impacts to wildlife, threatened and endangered species, wetlands, or plants would occur. Decreased airfield operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. Similarly, use of higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. Section 106 consultation letters were sent to four State Historic Preservation Offices (SHPOs); government-to-government coordination letters were mailed to numerous federally-recognized American Indian Tribes across the four states. The Section 106 letters

requested concurrence with the Air Force determination of no adverse impacts to National Register-eligible or potentially eligible archaeological, architectural, or traditional cultural properties within the Area of Potential Effect (APE). The Maine, New Hampshire, and New York State Historic Preservation Offices (SHPOs) indicated they concurred with the Air Force determination. The Burlington AGS is working with the Vermont SHPO to garner concurrence with the Air Force conclusion of no adverse effects to the APE. Government-to-Government coordination responses were received by several American Indian Tribes indicating no concerns; for those who did not reply it was assumed (per 32 Code of Federal Regulations [CFR] Part 800.3(c)(4)) that there were no issues or concerns.

Socioeconomics. ANG Scenario 1 would not change military personnel authorizations associated with Burlington AGS, nor change military payrolls. With no additional personnel, the scenario would not significantly impact regional employment, income, or regional housing market. ANG Scenario 2 would generate an increase of 266 military personnel, and an annual increase in salaries of approximately $3.4 million. Either scenario would expend an estimated $4.7 million in 2016 for proposed modification projects. The Burlington area would likely provide the skilled workers for the temporary construction jobs.

Environmental Justice. Table 6-9 displays the total, minority, and low-income populations in the vicinity of Burlington AGS affected by noise levels 65 dB DNL and greater. The proportion of minority populations (13 percent) affected under baseline conditions exceeds the state average of 5 percent and the 12 percent combined average found in South Burlington and Winooski. However, at 10 percent, low-income populations affected by noise levels 65 dB DNL and greater is less than the 11 percent average found at the state level and equal to that of the combined average proportion of low-income populations found in South Burlington and Winooski. Under ANG Scenarios 1 and 2, the total population affected by noise levels exceeding 65 dB DNL would increase. However, the proportion (11 percent) of minority populations would decrease by 2 percent when compared to baseline but still remain above the average found at the state level and only slightly below the combined average of South Burlington and Winooski. For low-income populations under both ANG scenarios, the proportion (16 percent) affected by noise levels 65 dB DNL and greater would increase by 6 percent and exceed both the average state (11 percent) and combined average (10 percent) of South Burlington and Winooski when compared to baseline conditions. In summary, ANG Scenarios 1 and 2 would proportionally affect fewer minority populations but more low-income populations when compared to baseline conditions.

Table 6-9. Minority and Low-Income Populations Affected by 65 dB DNL and Greater Noise Contour Bands at Burlington AGS

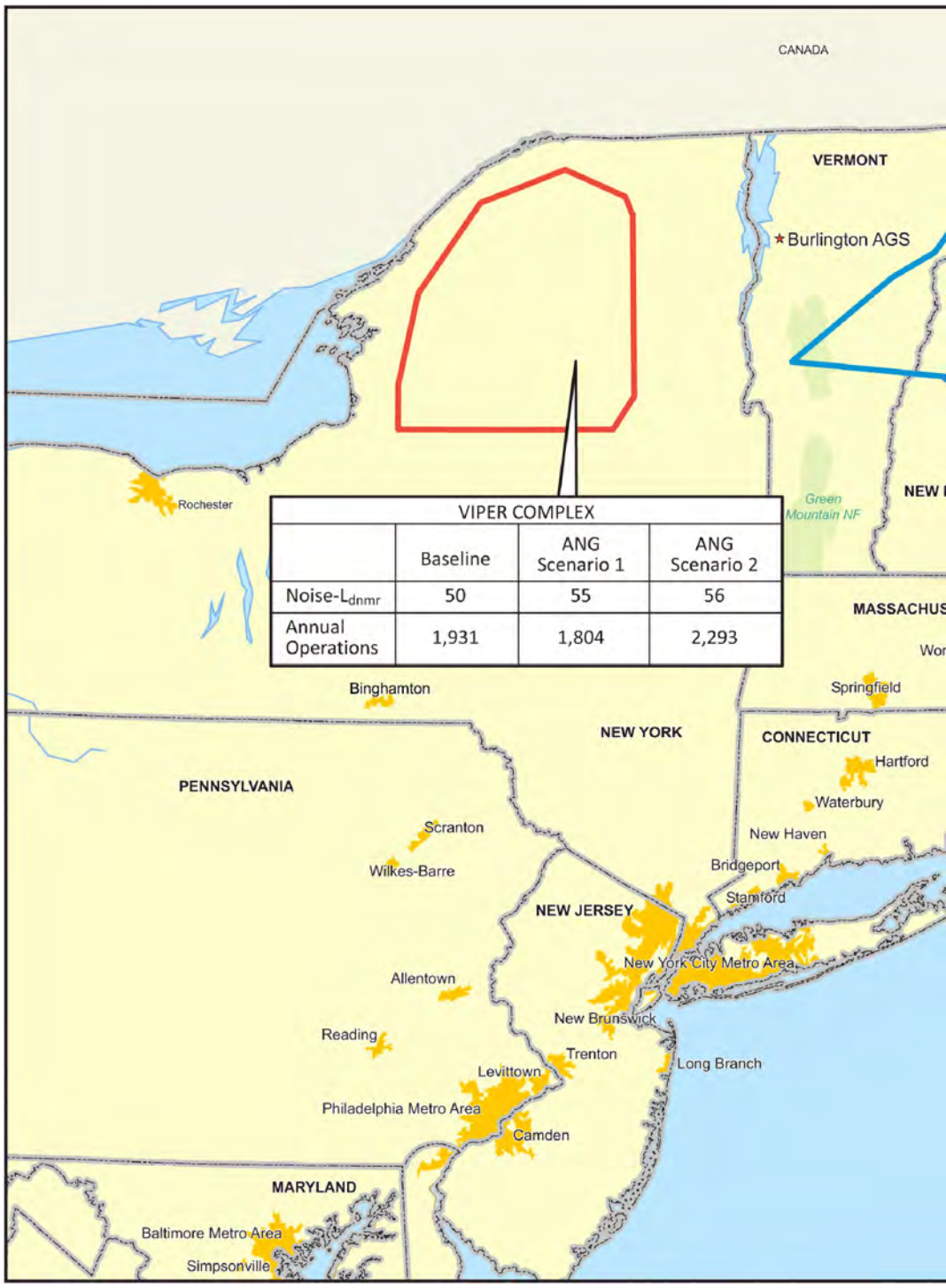
	Total Population	*Minority Population*	*Percent Minority*	*Low-Income Population*	*Percent Low-Income*
Baseline	4,602	581	13%	463	10%
ANG Scenario 1	6,663	748	11%	1,064	16%
ANG Scenario 2	7,719	856	11%	1,224	16%

Ground Traffic and Transportation. Despite a negligible, short-term increase in construction traffic, ANG Scenario 1 would not change travel demand for the base or affect the Level of Service (LOS) for any portion of the roadway network. A 24 percent increase in personnel would add to traffic volume for ANG Scenario 2, especially on "Guard weekends." This level would exceed the primary LOS threshold, but not the secondary and more critical threshold.

Other Resources. The EIS analyzed the potential environmental consequences of implementing ANG Scenarios 1 and 2 on three other resources: geology, soils, and water (BR3.5 in the EIS); community facilities and public services (BR3.13); and hazardous materials and waste (BR3.15). No aspect of the beddown scenarios would result in impacts to these resources.

Airspace and Range Use. Figure 6-3 depicts the main overland airspace and range units proposed for use by the F-35As. Data presented in the figure include total annual operations by all aircraft under baseline, ANG Scenario 1, and ANG Scenario 2. With replacement of the F-16s with the F-35As, such operations would fall below baseline levels in ANG Scenario 1, but exceed those levels slightly under ANG Scenario 2. The F-35As, however, would fly more time at higher altitudes than the F-16s, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 10 to 30 percent by the F-16s.

F-35As from Burlington AGS would also fly in overwater Warning Areas, although to a lesser degree than current use. Required supersonic operations would be conducted only in these Warning Areas, at least 15 nautical miles offshore and above 10,000 feet MSL.



VIPER COMPLEX

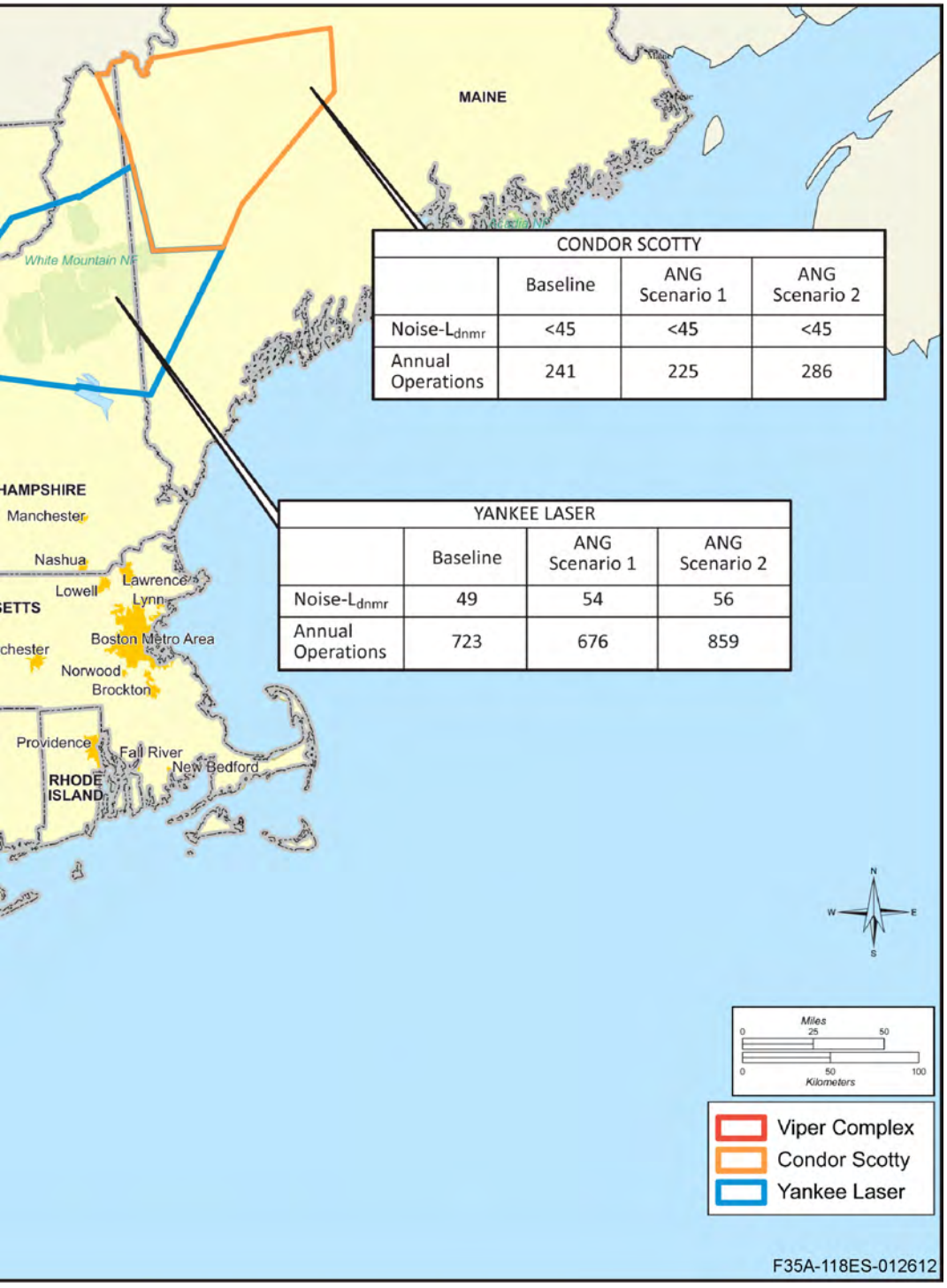
	Baseline	ANG Scenario 1	ANG Scenario 2
Noise-L_{dnmr}	50	55	56
Annual Operations	1,931	1,804	2,293

Figure 6-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by Burlington AGS

Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. Although perceptible changes in noise levels would occur within two of the three airspace units, overall

noise levels would continue to remain below 65 L_{dnmr}. In the third unit, Condor Scotty, noise levels would remain very low (less than 45 L_{dnmr}). Under both scenarios, there would be perceptible changes in noise for the Viper Complex and Yankee Laser with increases of 5 to 6 dB and 6 to 7 dB, respectively. These increases partially result from the different flight characteristics of the F-35A compared to F-16 and F-15 aircraft, as well as a change in use of the airspace.

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.



Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.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7.0 HILL AFB ALTERNATIVE OVERVIEW

7.1 AIRCRAFT TRANSITION

Hill AFB would accommodate 24 (ACC Scenario 1), 48 (ACC Scenario 2), or 72 (ACC Scenario 3) F-35A aircraft. The F-16 mission and 48 aircraft currently at the installation would either be reassigned or retired. Table 7-1 presents the three F-35A beddown scenarios. The Air Force identified Hill AFB as a preferred alternative.

Table 7-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*	*F-35A Beddown Scenarios*			*Total*	*Net Change in Aircraft*
	Based F-16	*ACC 1*	*ACC 2*	*ACC 3*		
Hill AFB	48	24			24	-24
			48		48	0
				72	72	+24

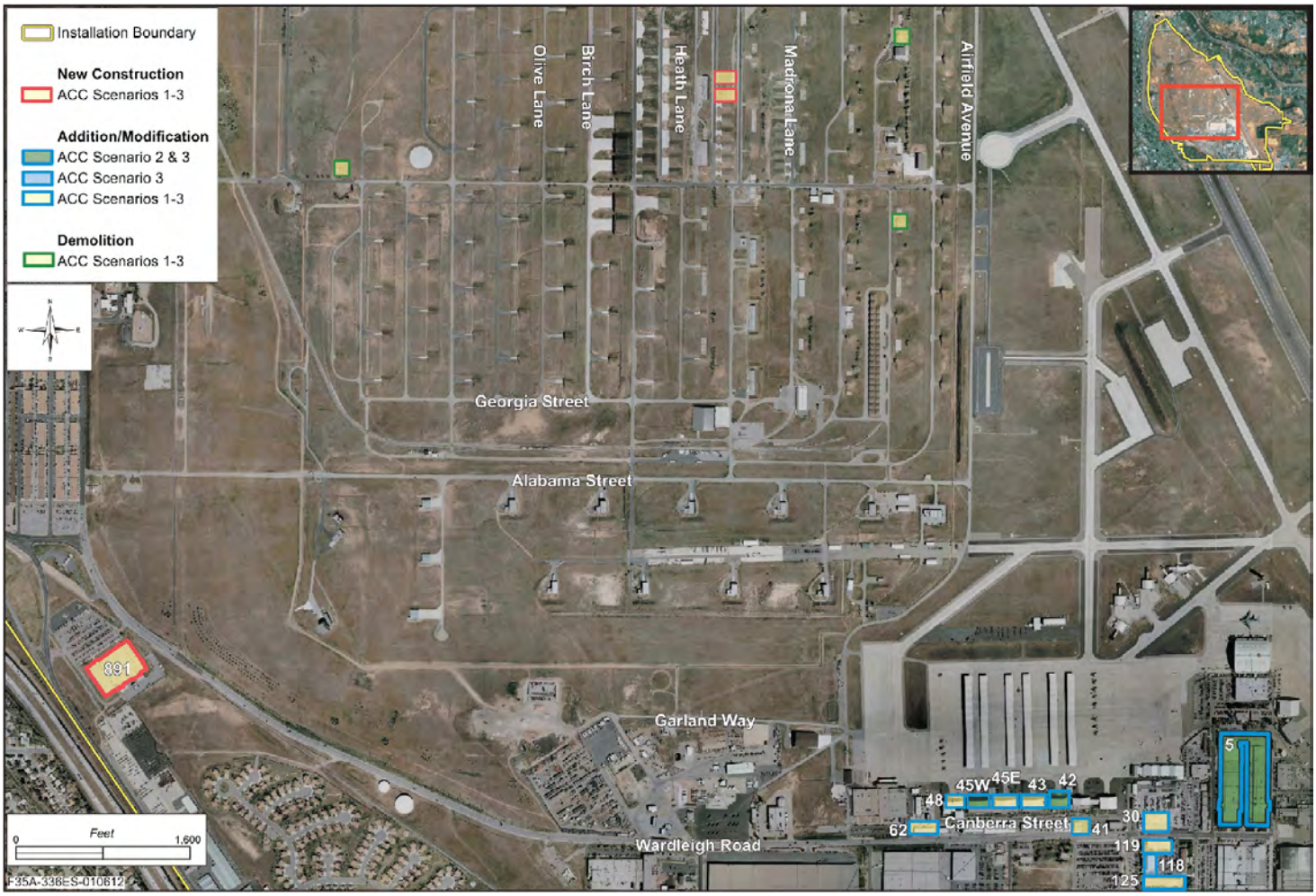


Figure 7-1. Hill AFB Construction Projects – ACC Scenarios 1, 2, and 3construction

A number of facility construction, modification, and renovation projects would be required to support beddown of the F-35As at Hill AFB under ACC Scenario 3 (Figure 7-1 and Table 7-2). Approximately 5 acres of previously disturbed ground would be affected. Proposed to occur from 2014 to 2018, the construction would cost an estimated $41 million under ACC Scenario 3, with lesser amounts proposed for ACC Scenarios 1 and 2.

Table 7-2. Proposed Construction and Modifications for Hill AFB

Year	*Action*	*Total Affected Area (acres)*	*New Impervious Surface (acres)*
ACC Scenario 1 (24 F-35As)			
2014	Addition and Alteration to Hangar 45W for Squadron Operations/Aircraft Maintenance Unit (AMU)	0.46	0.13
2014	Construct 1 Modular Storage Magazine; demolish 3 existing igloos 1391, 1411, and 1494	2.60	0.05
2014	Alteration to Building 119 for Squadron Operations	0	0
2014	Renovate Building 48 for wash rack	0	0
2014	Construct COMSEC Vault inside Building 891	0	0
2014	Alteration to Building 62 for aerospace ground equipment (AGE)	0	0
2014	Renovate Buildings 30 and 125 for Field Training Detachment	0	0
2014	Alteration to Parts Store, Building 39	0	0
2014	Addition and Alteration to Building 118 for Flight Simulators (Phase I)	0.31	0.08
2016-2018	Various Minor Internal Renovations/Alterations	0	0
Total	**Cost: $18,075,000**	**3.37**	**0.26**
ACC Scenario 2 (48 F-35As)			
2014	Addition and Alteration to Hangar 45W for Squadron Operations/AMU	0.46	0.13
2014	Construct 1 Modular Storage Magazine; demolish 3 existing igloos 1391, 1411, and 1494	2.60	0.05
2014	Addition and Alteration to Building 118 for Flight Simulators (Phase I)	0.31	0.08
2014	Alteration to Building 119 for Squadron Operations	0	0
2014	Renovate Building 48 for wash rack	0	0
2014	Construct COMSEC Vault inside Building 891	0	0
2014	Alteration to Building 62 for AGE	0	0
2014	Renovate Buildings 30 and 125 for Field Training Detachment	0	0
2014	Alteration to Parts Store, Building 39	0	0
2015	Alteration to Building 5 for Squadron Operations (second squadron)	0	0
2015	Addition and Alteration to Hangar 45E for Squadron Operations/AMU	0.46	0.12
2016	Addition to Building 118 for flight simulators (Phase II)	0.44	0.12
2016-2018	Various Minor Internal Renovations/Alterations	0	0
Total	**Cost: $30,419,000**	**4.27**	**0.50**
ACC Scenario 3 (72 F-35As)			
2014	Addition and Alteration to Hangar 45W for Squadron Operations/AMU	0.46	0.13
2014	Construct 2 Modular Storage Magazines; demolish 3 existing igloos 1391, 1411, and 1494	3.12	0.10
2014	Addition and Alteration to Building 118 for Flight Simulators (Phase I)	0.31	0.08
2014	Alteration to Building 119 for Squadron Operations	0	0
2014	Addition and Alteration to Hangar 45E for Squadron Operations/AMU	0.46	0.12
2014	Renovate Building 48 for wash rack	0	0
2014	Construct COMSEC Vault, Building 891	0	0
2014	Alteration to Building 62 for AGE	0	0
2014	Renovate Buildings 30 and 125 for Field Training Detachment	0	0
2014	Alteration to Parts Store, Building 39	0	0
2015	Alteration to Building 5 Squadron Operations (second squadron)	0	0
2016	Addition to Building 118 for flight simulators (Phase II)	0.44	0.12
2017	Alteration to Building 5 Squadron Operations (third squadron)	0	0
2018	Addition and Alteration to Hangar 42 for Squadron Operations/AMU	0.46	0.13
2016-2018	Various Minor Internal Renovations/Alterations	0	0
Total	**Cost: $40,800,000**	**5.25**	**0.68**

7.2 AIRFIELD OPERATIONS

The F-35As would employ similar take-off and landing procedures as currently used by the F-16s at Hill AFB. However, the new aircraft would fly fewer closed patterns overall, thereby reducing total airfield operations (Table 7-3). Flight profiles would also vary somewhat from the F-16s, but the F-35As would adhere to existing restrictions and avoidance procedures. About 0.6 percent of the time, the F-35A would fly between 10:00 p.m. and 7:00 a.m. Transient aircraft would also fly during this period of night.

Table 7-3. Comparison of ACC Scenarios – Airfield Operations

Aircraft	*ACC Scenario 1*	*ACC Scenario 2*	*ACC Scenario 3*
Based F-16	-34,032	-34,032	-34,032
Transients[1]	12,601	12,601	12,601
F-35A	10,667	21,334	32,001
Total	**23,268**	**33,935**	**44,602**
Percent Change from Baseline	**-50.1%**	**-27.2%**	**-4.4%**

Note: [1]Transients include visiting F-15C, KC-135, C-21, A-10, other.

7.3 PERSONNEL

Staffing levels to support operation and maintenance of 24 F-35As at Hill AFB (ACC Scenario 1) and the replacement of 48 F-16 aircraft would reduce personnel by 1,157 (Table 7-4). With the addition of 72 F-35As and replacement of the F-16s, personnel authorizations would increase by 13.

Table 7-4. Proposed Personnel Changes: Hill AFB

Aircraft	*Baseline*	*Proposed Scenarios*		
	F-16 Personnel	*F-35A Personnel*		
		ACC 1	ACC 2	ACC 3
F-16	1,742	0	0	0
F-35A		532	1,064	1,596
BOS Personnel		53	106	159
Total Personnel	**1,742**	**585**	**1,170**	**1,755**
Net Change	**N/A**	**-1,157**	**-572**	**+13**

7.4 HILL AFB ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. Hill AFB is an Air Force Materiel Command base that currently accommodates over 47,000 operations each year. Combined with other based and transient military aircraft, the operations by based F-16s produce noise as reflected by the baseline 65 dB DNL contour depicted in Figure 7-2. The figure overlays the 65 dB DNL contour for all scenarios at Hill AFB relative to baseline conditions. As this comparison reveals, noise contours from the three ACC Scenarios tend to cover a similar area relative to the baseline contour. None of the contours extend off the western side of Hill AFB where more contiguous residential land use occurs. For land use planning, the city and county employ the results of the most current Air Installation Compatibility Use Zone (AICUZ) study.

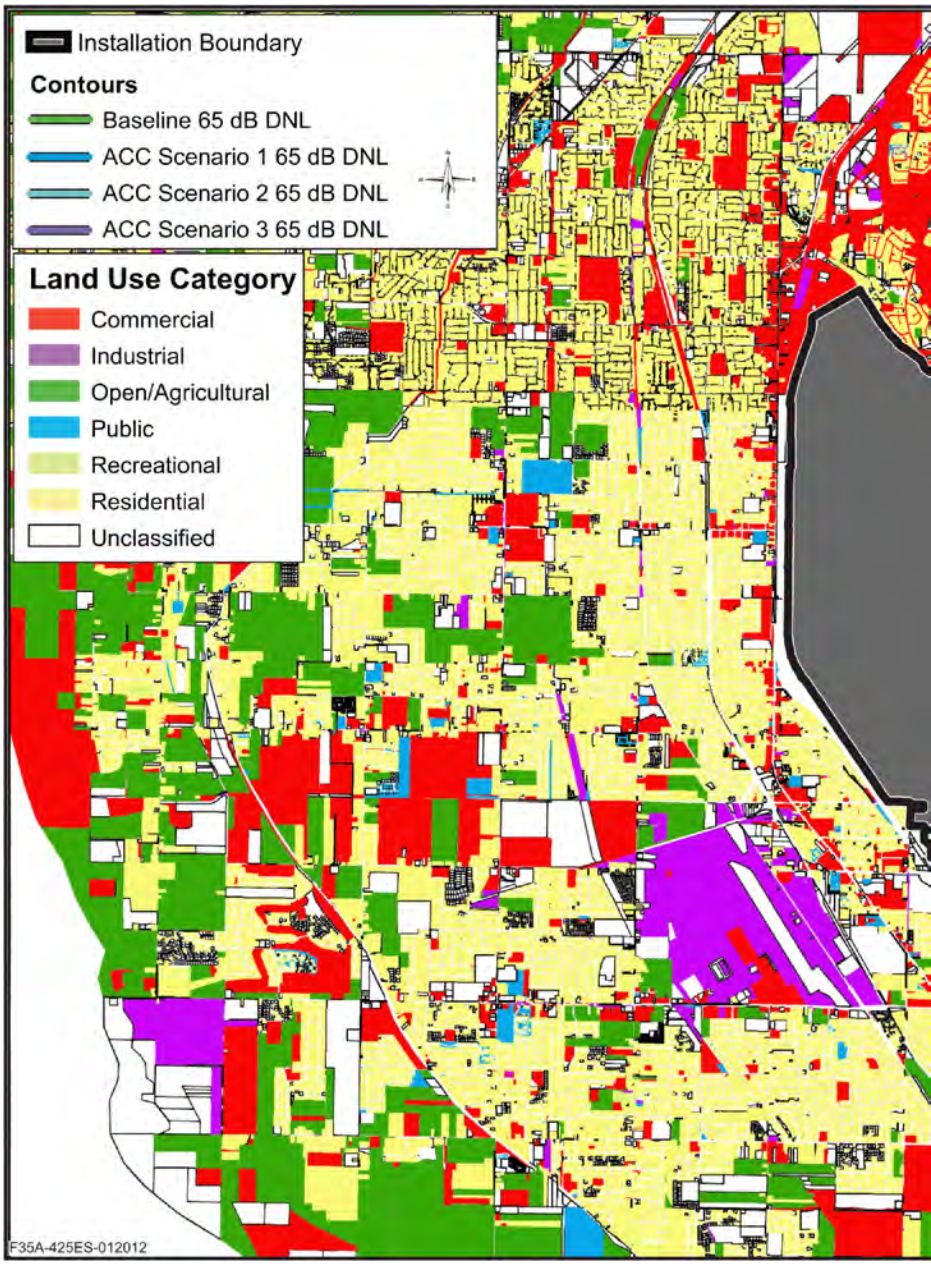


Figure 7-2. Hill AFB Comparison of Baseline and Projected 65 dB DNL Noise Contours for All Scenarios

Under ACC Scenarios 1 and 2, the overall area and residential land use subject to noise levels 65 to 80 dB DNL would decrease. Under ACC Scenario 3, the overall area affected by noise levels of 65 dB DNL and greater would increase as would residential land use subject to noise levels 65 to 80 dB DNL (Table 7-5). Some residential areas would be newly subject to noise above 65 dB DNL.

Table 7-5. Change in Acres of Defined Residential Land Use Within the 65 dB DNL and Greater Noise Contour Bands at Hill AFB

	Baseline (acres)	*Projected (acres)*	*Change (acres)*
ACC Scenario 1	689	303	-386
ACC Scenario 2	689	527	-162
ACC Scenario 3	689	736	+47

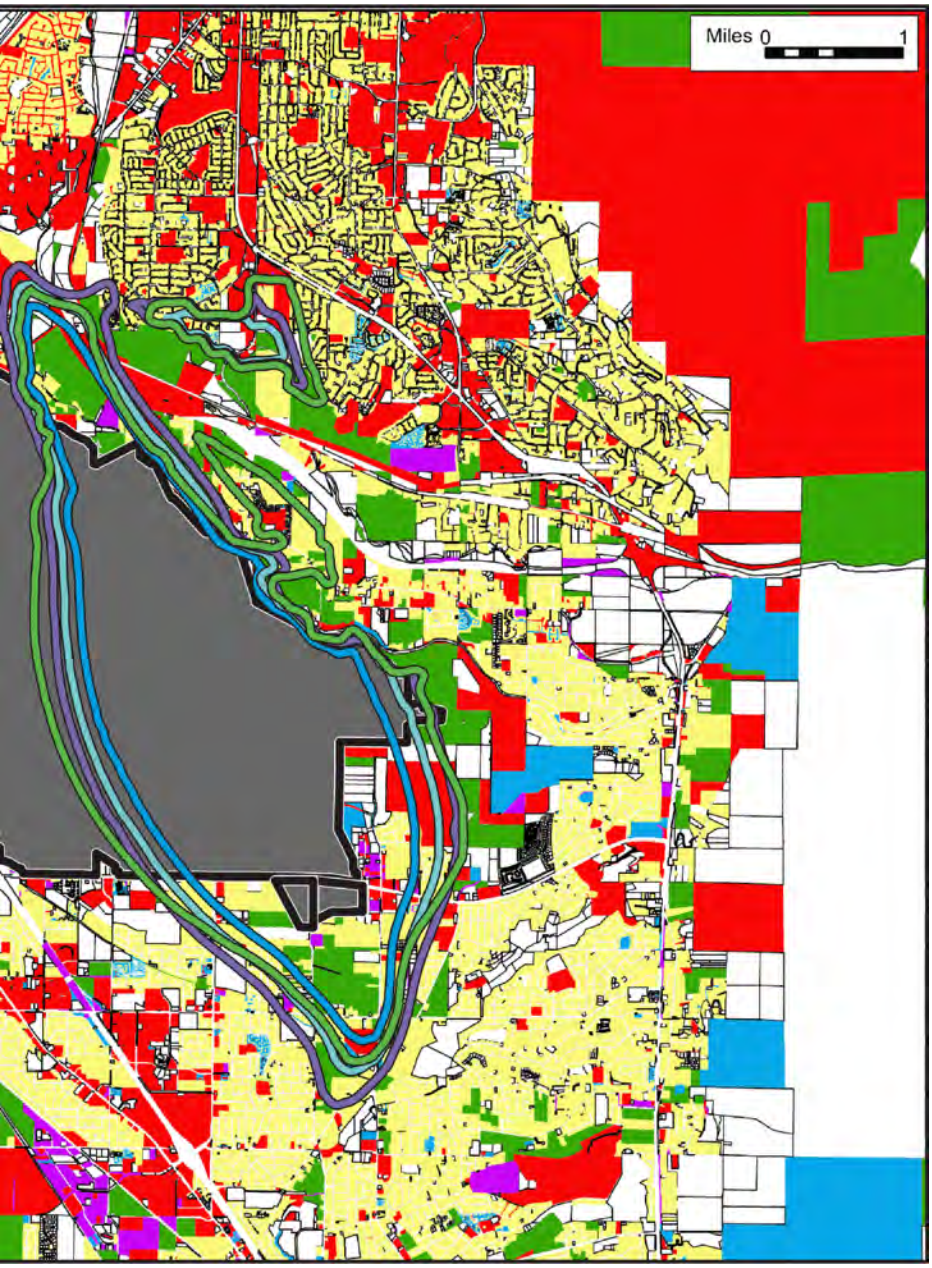


Table 7-6 compares baseline ACC Scenarios 1, 2, and 3 acres, population, and households affected by noise levels of 65 dB DNL and greater at and around the installation.

Table 7-6. Off-Base Noise Exposure under ACC Scenarios 1, 2, and 3 for Hill AFB (Proposed/Baseline)

Contour Band (dB DNL)[1]	*Acreage*	*Population*	*Households*
ACC Scenario 1			
65 – 70	1,004/1,962	2,952/6,045	1,072/2,227
70 – 75	148/343	939/1,289	292/420
75 – 80	1/14	57/379	17/114
80 – 85	0/0	0/0	0/0
85+	0/0	0/0	0/0
Total	**1,153/2,319**	**3,948/7,713**	**1,381/2,761**
ACC Scenario 2			
65 – 70	1,504/1,962	4,969/6,045	1,806/2,227
70 – 75	314/343	1,226/1,289	408/420
75 – 80	10/14	271/379	82/114
80 – 85	0/0	0/0	0/0
85+	0/0	0/0	0/0
Total	**1,828/2,319**	**6,466/7,713**	**2,296/2,761**
ACC Scenario 3			
65 – 70	1,994/1,962	6,995/6,045	2,532/2,227
70 – 75	476/343	1,554/1,289	546/420
75 – 80	32/14	490/379	149/114
80 – 85	0/0	0/0	0/0
85+	0/0	0/0	0/0
Total	**2,502/2,319**	**9,039/7,713**	**3,227/2,761**

Note: [1]Exclusive of upper bound for all bands.

As Table 7-6 shows, ACC Scenarios 1 and 2 would affect fewer acres, people, and households. For ACC Scenario 3 more acres, people, and households would be affected by noise levels of 65 dB DNL and greater when compared to baseline.

Noise effects also consider individual overflights. As presented in Table 7-7, the F-35A would be louder than the F-16s under all modes of flight as measured by single overflight metrics (SEL and L_{max}).

Table 7-7. SEL and L_{max} Comparison for Hill AFB

Condition	*Based F-16C*[1, 2]				*F-35A*[2, 3]			
	SEL (dBA)	*L_{max} (dBA)*	*Power (%NC)*	*Speed (kts)*	*SEL (dBA)*	*L_{max} (dBA)*	*Power (%ETR)*	*Speed (kts)*
Afterburner Assisted Take-off (1,000 feet AGL)[4]	**95**	**89**	92%	300	**116**	**114**	100%	300
Military Power Take-off (1,000 feet AGL)	**95**	**89**	92%	300	**116**	**114**	100%	300
Departure Holddown (6.500 MSL; 1,710 AGL)	**87**	**80**	90%	350	**93**	**89**	40%	350
Arrival (non-break, through 1,000 feet AGL, gear down)[5]	**97**	**89**	92%	200	**99**	**95**	40%	180
Overhead Break (downwind leg, 2,000 feet AGL, gear down)	**91**	**81**	92%	200	**93**	**87**	40%	200
Touch and Go (downwind leg, 2,000 feet AGL, gear down)	**90**	**81**	92%	250	**93**	**87**	40%	210
Re-entry Pattern (downwind leg, 2,000 feet AGL, gear up)	**80**	**74**	87%	300	**84**	**78**	30%	300
Radar Pattern (downwind leg, 2,000 feet AGL, gear up)	**81**	**74**	87%	250	**84**	**78**	30%	250

Hill AFB nominal elevation = 4,789 feet MSL; Weather: 40°F, 70% Relative Humidity; and SEL = Sound Exposure Level; L_{max} = Maximum (instantaneous) Sound Level; dBA = A-weighted decibel; NC=Engine Core revolutions per minute; kts = knots; ETR = Engine thrust request. *Notes*: All numbers are rounded. [1]Modeled F-16C with F110-GE-100 engine. [2]F-16 Aircraft spend 90 percent of take-off in afterburner compared to 5 percent by the F-35. [3]Modeled with reference acoustic data for an F-35A. [4]Power reduced from afterburner to military power prior to reaching 1,000 feet AGL. [5]F-16C values reflect gear up condition.

Air Quality. Net changes under ACC Scenario 1 would involve decreases for all criteria pollutants, and for ACC Scenario 2, all emissions would decrease except for SO_x. Under the maximum beddown (ACC Scenario 3), SO_x would increase, while all remaining emissions would decrease (Table 7-8) when compared to baseline emissions. Under all scenarios, there would be no net changes in criteria pollutant emissions that would exceed established *de minimis* thresholds when compared to baseline. No conformity determination is required. Emissions associated with construction and operations activities from all scenarios would incrementally decrease regional emissions of CO_2e.

Table 7-8. Proposed Annual Operational Emissions under ACC Scenario 3 at Hill AFB

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[1]
F-35A Aircraft	47.89	258.89	1.86	18.21	1.25	1.25	78,926.19
Engine Run-ups	1.41	0.28	0.04	0.06	0.00	0.00	264.56
AGE[2]	19.83	17.68	1.07	4.98	1.61	1.56	4,615.93
POVs	91.31	4.13	5.31	0.09	0.24	0.24	4,388.48
Total Annual ACC Scenario 3 Emissions	**160.44**	**280.98**	**8.28**	**23.35**	**3.10**	**3.10**	**83,580.79**
Baseline Annual Emissions	551.16	411.13	94.13	12.38	59.28	53.78	93,256
Net Change	***-390.73***	***-130.16***	***-85.85***	***10.97***	***-56.18***	***-50.68***	***-9,675.04***
***de Minimis* Thresholds**	**-**	**100**	**100**	**100**	**-**	**100**	**-**
Major Source Threshold	**250**	**-**	**-**	**-**	**250**	**-**	**-**

Notes:
[1]CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310), (40 CFR 98, Subpart A, Table A-1) in metric tons per year.
[2]With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single engine aircraft, and an extensive, rigorous testing program. Overall, the risks of an aircraft mishap are not expected to increase substantially.

Biological Resources. Under ACC Scenarios 1, 2, and 3, facility projects would produce a maximum of 5.25 acres of surface disturbance. This construction would not impact plants, wildlife, wetlands, or special status species. Noise from aircraft operations would increase, but the wildlife in the area of Hill AFB have become habituated to it. As such, no impacts to wildlife, threatened and endangered species, wetlands, or plants would occur. Decreased airfield operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. Similarly, use of higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. There would be no adverse impacts to National Register listed or eligible archaeological, architectural, or traditional cultural properties. In August 2012, Section 106 of the National Historic Preservation Act (NHPA) consultation was initiated by Hill AFB and letters sent to the Utah and Nevada State Historic Preservation Offices (SHPOs) requesting concurrence with the Air Force determination of no adverse impacts to the APE. The Utah and Nevada SHPOs responded with no comments (see Appendix B). Hill AFB conducted government-to-government consultation with 20 American Indian Tribes who could have the potential to be affected by the proposal. The letter (sent in August 2012) requested concurrence with the Air Force determination of no adverse impacts within the APE. With the exception of the Goshutes, no other correspondence has been received to date.

Socioeconomics. ACC Scenario 1 would result in a loss of 1,157 personnel authorizations, and a loss of 572 personnel authorizations under ACC Scenario 2. However, the scenarios would not substantially impact regional employment, income, or regional housing market. ACC Scenario 3 would generate an increase of 13 military personnel authorizations, and an annual increase in salaries of approximately $0.3 million. This scenario would expend an estimated $41 million in 2013 to 2017 for proposed construction projects. The Hill AFB area would likely provide the skilled workers for the temporary construction jobs.

Environmental Justice. Table 7-9 displays the total, minority, and low-income populations affected by noise levels 65 dB DNL and greater in the vicinity of Hill AFB. Under baseline conditions, the proportion (10 percent) of minority populations exceeds the average (8 percent) found at the state level; for low-income populations, the 10 percent exposed to noise levels 65 dB DNL and greater would be less than the 11 percent average found at the state level. Under all three ACC Scenarios, however, the proportion of minority populations exposed to noise levels 65 dB DNL and greater would continue to exceed (by 2 to 3 percent) the 8 percent found at the state level, but fall (from 9 to 2 percent) below state low-income population averages. Under all the ACC scenarios, proportionate impacts would remain relatively unchanged when compared to baseline conditions.

Table 7-9. Minority and Low-Income Populations Affected by 65 dB DNL and Greater Noise Contour Bands at Hill AFB

	Total Population	*Minority Population*	*Percent Minority*	*Low-Income Population*	*Percent Low-Income*
Baseline	7,713	521	10	729	10
ACC Scenario 1	3,947	427	11	66	2
ACC Scenario 2	6,467	673	10	93	1
ACC Scenario 3	9,038	920	10	799	9

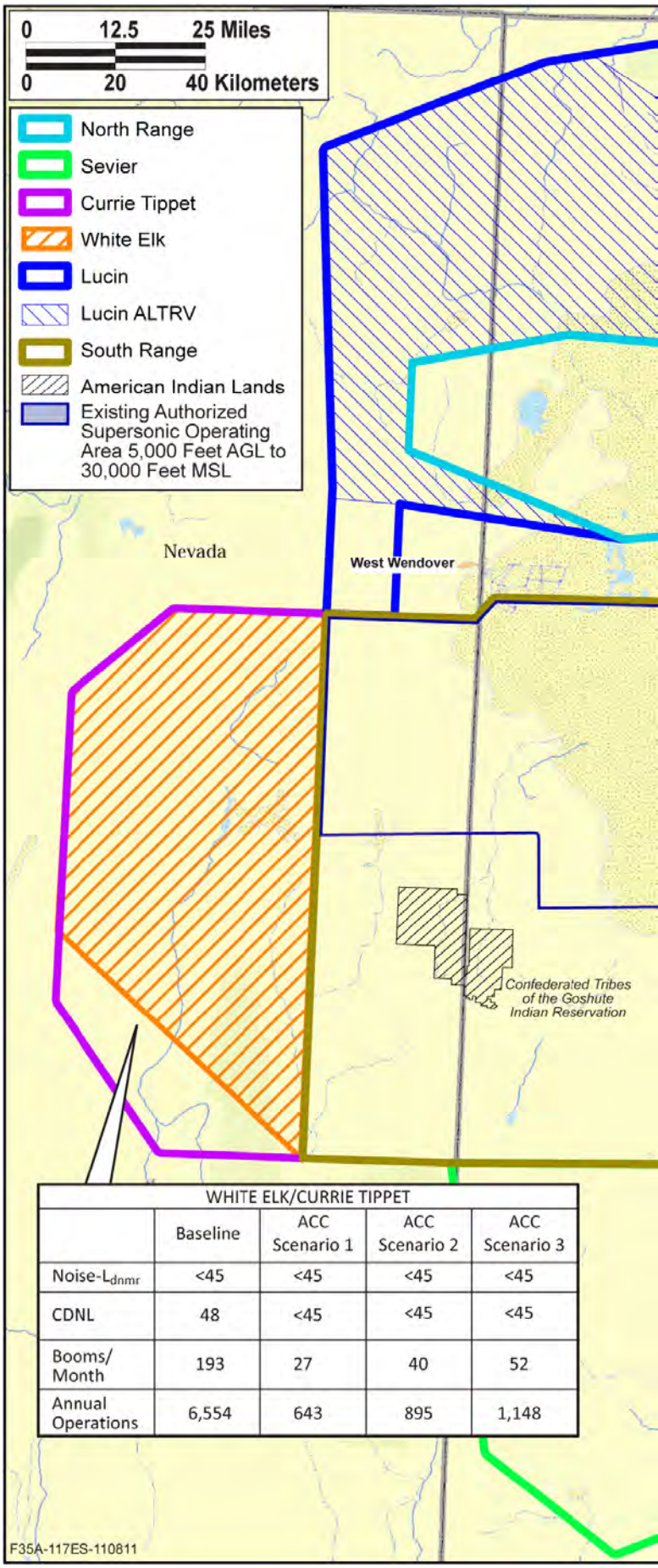
Ground Traffic and Transportation. Despite a negligible, short-term increase in construction traffic, ACC Scenarios 1, 2, and 3 would not increase traffic for the base or affect the Level of Service (LOS) for any portion of the roadway network. Indeed, traffic is expected to decrease under ACC Scenarios 1 and 2.

Other Resources. The EIS analyzed the potential environmental consequences of implementing ACC Scenarios 1, 2, and 3 on three other resources: geology, soils, and water (HL3.5 in the EIS); community facilities and public services (HL3.13); and hazardous materials and waste (HL3.15). No aspect of the beddown scenarios would result in impacts to these resources.

Airspace and Range Use. Figure 7-3 depicts the airspace and range units proposed for use by the F-35As. Data presented in the figure include total annual operations for all aircraft under baseline, ACC Scenario 1, ACC Scenario 2, and ACC Scenario 3. With replacement of the F-16s with the F-35As, such operations would fall below baseline levels in ACC Scenarios 1 and 2, but exceed those levels slightly under ACC Scenario 3. The F-35As, however, would fly more time at higher altitudes than the F-16s, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 10 to 30 percent by the F-16s.

Required supersonic operations would be conducted only in areas approved for its use (i.e., South Range) or above 30,000 feet MSL. Supersonic operations in the North Range are only used for testing purposes.

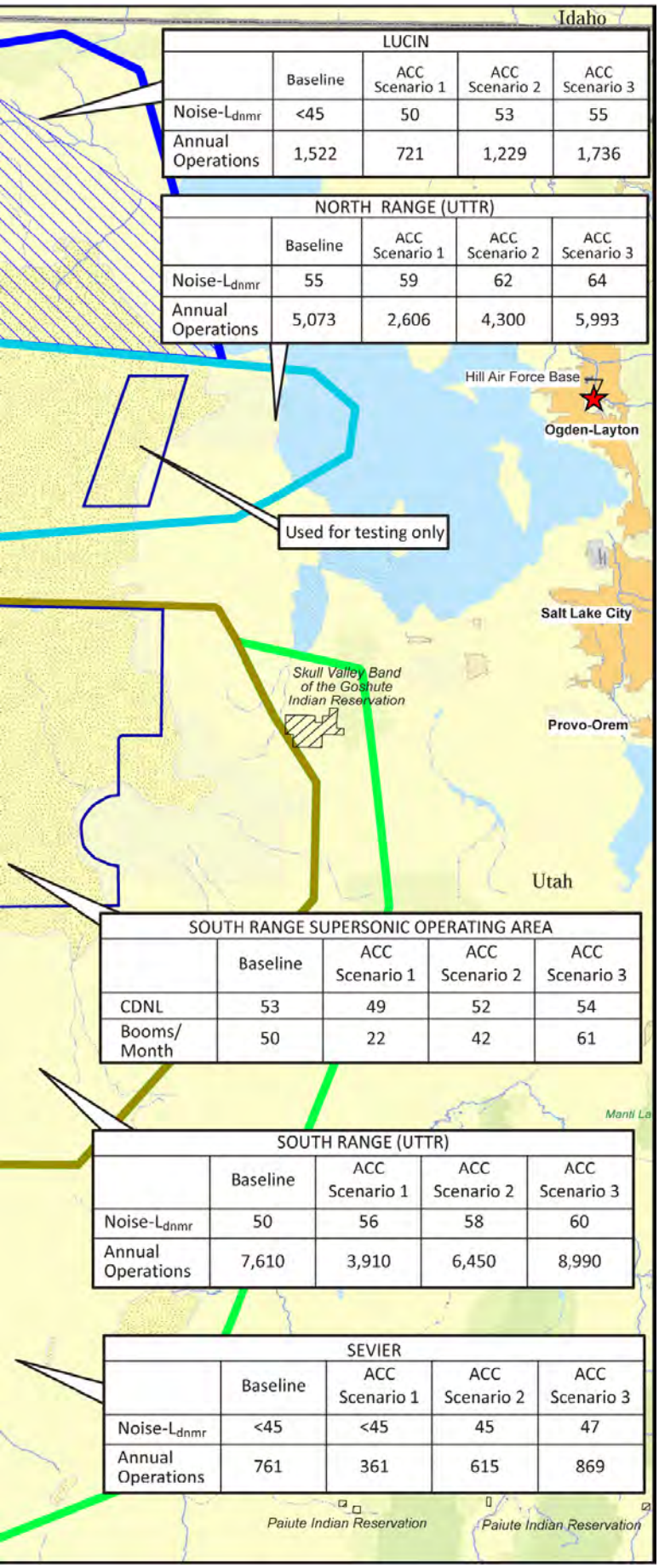
Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. For Lucin, North Range, and South Range, subsonic noise levels would increase perceptibly (i.e., 3 dB or greater) in all scenarios. None, however, would exceed 65 dB DNL. The airspace overlies a few communities; it also extends above an American Indian reservation. These locations would experience perceptible changes in noise and increased annoyance from aircraft operations. However, potential overflights per flying day would decrease by about 14 and 4, respectively for ACC Scenarios 1 and 2. Although operations would increase by 6 per flying day in ACC Scenario 3, the F-35A operations would commonly occur at higher altitudes than current F-16s. Noise levels in Sevier and White Elk/Currie Tippet would remain low and generally consistent with ambient conditions.



WHITE ELK/CURRIE TIPPET

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	<45	<45	<45
CDNL	48	<45	<45	<45
Booms/ Month	193	27	40	52
Annual Operations	6,554	643	895	1,148

Figure 7-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by Hill AFB



LUCIN				
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	50	53	55
Annual Operations	1,522	721	1,229	1,736

NORTH RANGE (UTTR)				
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	55	59	62	64
Annual Operations	5,073	2,606	4,300	5,993

SOUTH RANGE SUPERSONIC OPERATING AREA				
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
CDNL	53	49	52	54
Booms/ Month	50	22	42	61

SOUTH RANGE (UTTR)				
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	50	56	58	60
Annual Operations	7,610	3,910	6,450	8,990

SEVIER				
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	<45	45	47
Annual Operations	761	361	615	869

Sonic booms in the portion of South Range where supersonic activities can occur would increase from 50 to 61 per month under ACC Scenario 3. The number of sonic booms would decrease under ACC Scenarios 1 and 2, relative to baseline conditions.

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.

Under ACC Scenario 3, persons under the Lucin, North Range, and South Range airspace could perceive an increase in noise. Such increases would likely add to the percentage of the population annoyed by aircraft noise. Persons recreating in special land use areas, such as a wilderness study area, may consider additional noise especially intrusive. However, under ACC Scenarios 1 and 2, per flying day overflights would decrease measurably. Given the proposed increase in use of higher altitudes, the potential for low-altitude overflights of any specific location would be minimal.

Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.

8.0 JACKSONVILLE AGS ALTERNATIVE OVERVIEW

8.1 AIRCRAFT TRANSITION

Jacksonville AGS would accommodate 18 (ANG Scenario 1) or 24 (ANG Scenario 2) F-35A aircraft. The F-15C mission and 18 F-15C aircraft currently at the installation would either be reassigned or retired. Table 8-1 presents the two F-35A beddown scenarios.

Table 8-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*	*F-35A Beddown Scenarios*		*Total*	*Net Change in Aircraft*
	Based F-15C	*ANG 1*	*ANG 2*		
Jacksonville AGS	18	18		18	0
			24	24	+6

Figure 8-1. Jacksonville AGS Construction Projects – ANG Scenarios 1 and 2

8.2 CONSTRUCTION

A total of three facility modification and renovation projects would be required to support beddown of the F-35As at Jacksonville AGS under either scenario (Figure 8-1 and Table 8-2). None of these projects would disturb new ground; all modifications would occur within existing facilities. Proposed to occur in 2017, these modifications and renovations would cost an estimated $0.4 million.

Table 8-2. Proposed Construction and Modifications for Jacksonville AGS[1]

Year	*Action*	*Total Affected Area (acres)*	*New Impervious Surface (acres)*
2017	Renovate Building 1005 for F-35A Simulator Bays	0	0
2017	Provide 270V DC Power in Building 1001 (6 Bays)	0	0
2017	Provide Additional Secure Space, Building 1027	0	0
Total	**Cost: $400,000**	**0**	**0**

Note: [1]All construction includes only internal modifications; consequently, there are no associated affected areas of new impervious surfaces.

8.3 AIRFIELD OPERATIONS

The F-35As would employ similar take-off and landing procedures as currently used by the F-15Cs at Jacksonville AGS. However, the new aircraft operations would include fewer closed patterns overall, thereby reducing total airfield operations (Table 8-3). Flight profiles would also vary somewhat from the F-15Cs, but the F-35As would adhere to existing restrictions and avoidance procedures. No flying between 10:00 p.m. and 7:00 a.m. would be planned for the F-35As, although civil and commercial aircraft at Jacksonville International Airport (IAP) would continue to fly during this period.

Table 8-3. Comparison of ANG Scenarios – Airfield Operations

Jacksonville AGS Basing Scenario	*ANG Scenario 1*	*ANG Scenario 2*
Based F-15C	-7,223	-7,223
Other Military Aircraft	1,807	1,807
Transients[1]	3,209	3,209
F-35A	5,486	7,296
Jacksonville IAP	116,840	116,840
Total	**126,370**	**128,180**
Percent Change from Baseline	**-1.4%**	**+0.06%**

Source: Wyle 2010.
Note : [1]Transients include visiting P-3, UH-60; other based military includes C-130 and C-12.

8.4 PERSONNEL

The Air Force expects that existing staffing levels would be sufficient to support operation and maintenance of 18 F-35As at Jacksonville AGS (ANG Scenario 1). Beddown of six more F-35As (24 total – ANG Scenario 2) would require addition of 249 (24 percent increase) more military personnel (Table 8-4).

Table 8-4. Proposed Personnel Changes: Jacksonville AGS

	Baseline	*Proposed Scenarios*		*Net Change Per Scenario*	
	F-15C Personnel	*F-35A Personnel*			
	Total	ANG 1	ANG 2	ANG 1	ANG 2
Total	**1,035**	**1,035**	**1,284**	**0**	**+249**

8.5 JACKSONVILLE AGS ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. Jacksonville IAP is a joint-use airfield that currently accommodates over 116,000 commercial and civilian aircraft operations each year. Combined with operations by based F-15Cs, as well as other based and transient military aircraft, these operations produce noise as reflected by the baseline 65 dB DNL contour depicted in Figure 8-2. This figure overlays the 65 dB DNL contours for both scenarios at Jacksonville AGS relative to the baseline 65 dB DNL contour. As this comparison reveals, all off-installation portions of the noise contours from the two ANG Scenarios fall within the area of the baseline contour. The affected area mostly overlays the airport itself and open/agricultural lands.

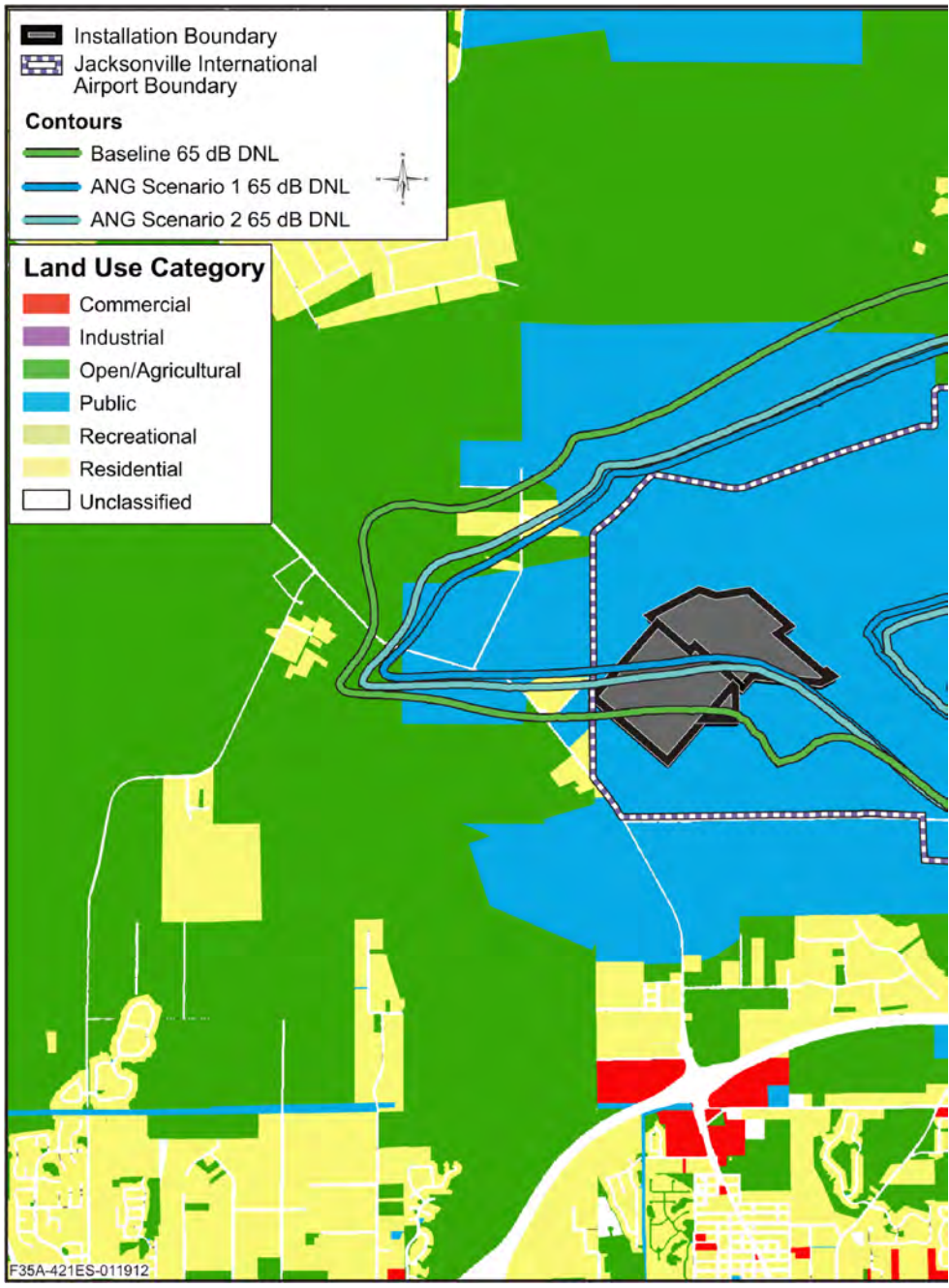


Figure 8-2. Jacksonville AGS Comparison of Baseline and Projected 65 dB DNL Noise Contours for Both Scenarios

Under both scenarios, the overall area affected by noise levels of 65 dB DNL and greater would decrease as would residential land use subject to noise levels 65 to 75 dB DNL (Table 8-5). Land use would not change and the effects of overflights would be dominated by commercial aircraft.

Table 8-5. Change in Acres of Defined Residential Land Use Within the 65 dB DNL and Greater Noise Contour Bands at Jacksonville AGS

	Baseline (acres)	*Projected (acres)*	*Change (acres)*
ANG Scenario 1	125	10	-115
ANG Scenario 2	125	36	-89

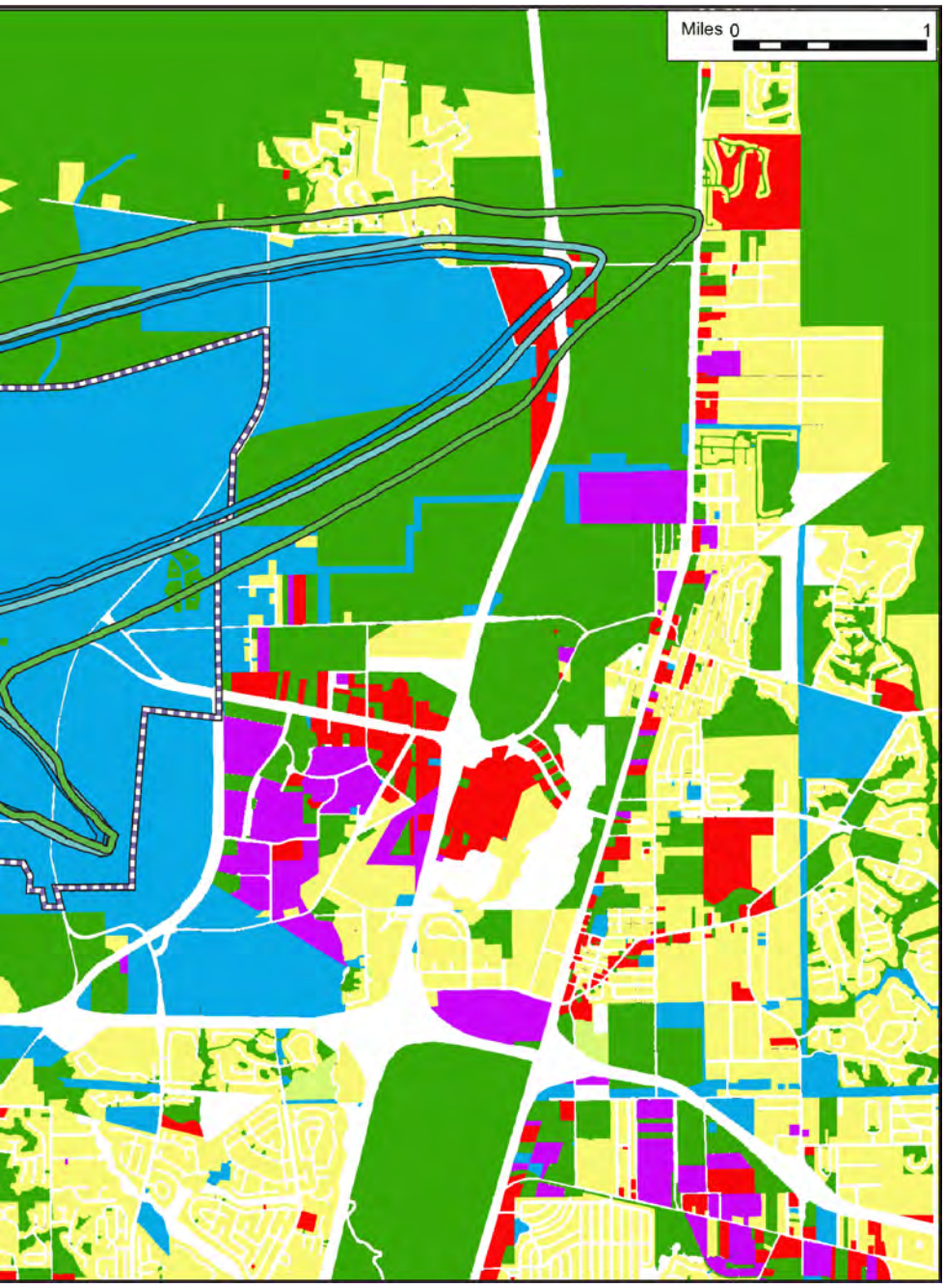


Table 8-6 compares baseline ANG Scenario 1 and ANG Scenario 2 acreage, population, and households affected by noise levels of 65 dB DNL and greater at and around the installation. As these data show, both scenarios would reduce impacts when compared to baseline conditions.

Table 8-6. Off-Base Noise Exposure under ANG Scenarios 1 and 2 at Jacksonville AGS (Proposed/Baseline)

Contour Band (dB DNL)	*Acreage*	*Population*	*Households*
ANG Scenario 1			
65 – 70	1,360/2,197	170/296	45/83
70 – 75	360/945	0/12	0/5
75 – 80	10/36	0/0	0/0
80 - 85	0/64	0/0	0/0
85+	0/0	0/0	0/0
Total	**1,730/3,242**	**170/308**	**45/88**
ANG Scenario 2			
65 – 70	1,637/2,197	210/296	57/83
70 – 75	515/945	0/12	0/5
75 – 80	33/36	0/0	0/0
80 - 85	0/64	0/0	0/0
85+	0/0	0/0	0/0
Total	**2,185/3,242**	**210/308**	**57/88**

Noise effects also consider individual overflights. As presented in Table 8-7, the F-35A would generally be louder than the F-15Cs under all modes of flight as measured by single overflight metrics (SEL and L_{max}).

Table 8-7. SEL and L_{max} Comparison for Jacksonville AGS

Event	Based F-15A[1]				F-35A[2]			
	SEL (dBA)	*L_{max} (dBA)*	*Power (%NC)*	*Speed (kts)*	*SEL (dBA)*	*L_{max} (dBA)*	*Power (%ETR)*	*Speed (kts)*
Afterburner Assisted Take-off[3] (1,000 feet AGL)	112	104	90%	275	119	116	100%	300
Military Power Take-off (1,000 feet AGL)	112	104	90%	275	119	116	100%	300
Arrival (non-break, through 1,000 feet AGL, gear down[4])	100	92	82%	180	99	95	40%	180
Overhead Break (downwind leg, 2,000 feet AGL, gear down)	78	70	72%	180	93	87	40%	200
Low Approach and Go (downwind leg, 2,000 feet AGL, gear down)	95	85	82%	180	93	87	40%	210

Jacksonville AGS nominal elevation = 30 feet MSL; Weather: 69°F, 80% Relative Humidity; dBA = A-weighted decibel; NC=Engine Core revolutions per minute; kts = knots; ETR = Engine thrust request. *Notes*: All numbers are rounded. [1]Modeled F-16C with F110-GE-100 engine; [2]Modeled with reference acoustic data for an F-35A (Air Force 2009); [3]Power reduced from Afterburner to military power prior to reaching 1,000 feet AGL; [4]F-15C values reflect gear up conditions.

Air Quality. Under Scenario 1, emissions would decrease for all seven pollutant categories. Under ANG Scenario 2, minor increases in SO_x would result. Neither ANG Scenario 1 nor 2 would introduce emissions that would deteriorate regional air quality; the area would remain in attainment for all federal and state air quality standards. Table 8-8 presents the emissions from operations under each scenario.

Table 8-8. Proposed Annual Operational Emissions under ANG Scenarios 1 and 2 at Jacksonville AGS

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[1]
ANG Scenario 1							
Aircraft	12.68	32.75	0.42	17.36	1.13	1.13	11,945
Engine Runups	0.29	0.19	0.01	0.13	0.01	0.01	92
AGE[2]	3.86	3.44	0.21	0.97	0.31	0.30	895
POVs	34.42	1.69	2.23	0.04	0.10	0.10	1,857
Total Annual ANG Scenario 1 Emissions							
Baseline Annual Emissions	209.15	62.90	39.42	19.46	5.82	5.46	26,580
Net Change	***-157.01***	***-24.83***	***-36.54***	***-0.96***	***-4.27***	***-3.92***	***-11,791***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**
ANG Scenario 2							
Aircraft	14.17	37.56	0.47	19.75	1.28	1.28	13,588
Engine Runups	0.39	0.26	0.01	0.18	0.01	0.01	122
AGE[2]	5.13	4.57	0.28	1.29	0.42	0.40	1,194
POVs	43.06	2.12	2.79	0.05	0.13	0.13	2,329
Total Annual ANG Scenario 2 Emissions	**62.74**	**44.51**	**3.56**	**21.26**	**1.83**	**1.82**	17,232
Baseline Annual Emissions	209.15	62.90	39.42	19.46	5.82	5.46	26,580
Net Change	***-146.41***	***-18.39***	***-35.86***	***1.80***	***-3.99***	***-3.64***	***-9,348***
Major Source Threshold	250	250	250	250	250	250	-

Notes:
[1]CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310), (40 CFR 98, Subpart A, Table A-1) in metric tons per year.
[2]With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single engine aircraft, and an extensive, rigorous testing program. Overall, the risks of an aircraft mishap are not expected to increase substantially.

Biological Resources. Under ANG Scenarios 1 and 2, facility renovation projects would produce no surface disturbance and would not impact biological resources. Noise from aircraft operations would increase only under ANG Scenario 2, but the wildlife in the area of Jacksonville IAP have become habituated to it. As such, no impacts to wildlife, threatened and endangered species, wetlands, or plants would occur. Decreased airfield operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. Similarly, use of higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. There would be no adverse impacts to National Register-eligible or potentially eligible archaeological, architectural, or traditional cultural properties. The Florida SHPO concurred with the Air Force determination of no effect. Letters sent to federally-recognized American Indian Tribes initiated government-to-government consultation in January 2010 and follow-on correspondence was sent in October 2012 to the four federally-recognized American Indian groups that would have potential interest in the proposed action at Jacksonville AGS. In the letter, the Air National Guard requested any negative responses to the conclusion stated in the Draft EIS that there would be no effects to cultural and traditional resources. No negative responses were received from the four Tribes.

Socioeconomics. ANG Scenario 1 would not change military personnel authorizations associated with Jacksonville AGS, nor change military payrolls. With no additional personnel authorizations, the scenario would not impact regional employment, income, or regional housing market. ANG Scenario 2 would generate an increase of 249 military personnel authorizations, and an annual increase in salaries of approximately $3.4 million. Either scenario would expend an estimated $0.4 million in 2015 for proposed modification projects. The Jacksonville area would likely provide the skilled workers for the temporary construction jobs.

Environmental Justice. Table 8-9 displays the total, minority, and low-income populations in the vicinity of Jacksonville AGS affected by noise levels 65 dB DNL and greater. As the data demonstrate, when compared to state averages (22 percent minority and 15 percent low income), 31 percent minority and 8 percent low-income populations are affected by noise levels greater than or equal to 65 dB DNL under baseline conditions. This exceeds the state average for minority populations but is well below the state average for low-income populations. This ratio would remain relatively unchanged under ANG Scenarios 1 and 2. The proportion of minority populations would increase slightly (1 percent) when compared to baseline conditions but decrease slightly (2 to 3 percent) for the proportion of low-income individuals affected by noise levels 65 dB DNL and greater. However, under either scenario, the actual number of people affected by noise levels greater than 65 dB DNL would decrease.

Table 8-9. Minority and Low-Income Populations Affected by 65 dB DNL and Greater Noise Contour Bands at Jacksonville AGS

	Total Population	*Minority Population*	*Percent Minority*	*Low-Income Population*	*Percent Low-Income*
Baseline	308	97	31	25	8
ANG Scenario 1	170	54	32	8	5
ANG Scenario 2	210	67	32	12	6

Ground Traffic and Transportation. Despite a negligible, short-term increase in construction traffic, ANG Scenario 1 would not change travel demand for the base or affect the Level of Service (LOS) for any portion of the roadway network. A 24 percent increase in personnel would increase traffic volume for ANG Scenario 2, especially on "Guard weekends." This level would exceed the primary LOS threshold by 12.2 percent, but not the secondary and more critical threshold.

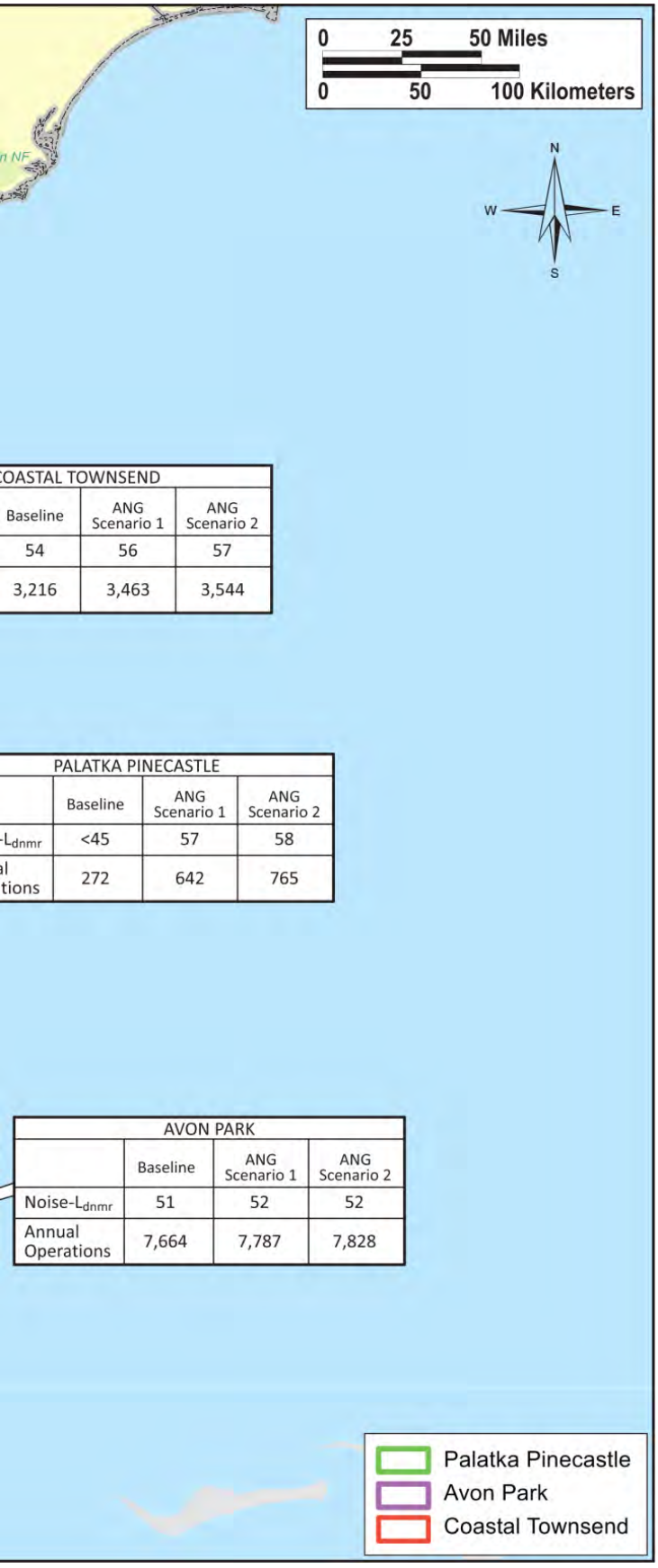
Other Resources. The EIS analyzed the potential environmental consequences of implementing ANG Scenario 1 and 2 on three other resources: geology, soils, and water (JX3.5 in the EIS); community facilities and public services (JX3.13); and hazardous materials and waste (JX3.15). No aspect of the beddown scenarios would result in impacts to these resources.

Airspace and Range Use. Figure 8-3 depicts the main overland airspace and range units proposed for use by the F-35As. Data presented in the figure includes total annual operations for all aircraft under baseline, ANG Scenario 1, and ANG Scenario 2. Such operations would increase above baseline levels in both scenarios due to a shift in use to these units. Increases would range from less than one operation per flying day to less than two per flying day. The F-35As would fly more time at higher altitudes than the F-15Cs, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 10 to 30 percent by the F-15Cs.

F-35As from Jacksonville AGS would also fly in overwater Warning Areas, established over the Atlantic Ocean. In a grouping of Warning Areas known as a Special Operating Area, the F-15Cs from Jacksonville AGS perform about 1,600 operations annually. Such activity represents a continuation of baseline operations and would not alter conditions in the overwater airspace. Required supersonic operations would also be conducted only in these Warning Areas, at least 15 nautical miles offshore or above 30,000 feet MSL.

Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. For Coastal Townsend, subsonic noise levels would increase perceptibly (i.e., 3 dB or greater) in ANG Scenario 2. Neither scenario, however, would exceed 65 dB. Noise levels in Palatka Pinecastle would increase substantially and perceptibly resulting in a doubling of perceived sound in both scenarios. Avon Park noise would increase but not perceptibly. The limited number of low-altitude overflights per day would decrease, thereby reducing potential impacts from single events. In the Coastal Townsend airspace, operations per flying day would increase under ANG Scenario 1 by about 1 and 1.25 for ANG Scenario 2. Total operations per flying day in Palatka Pinecastle would increase by a maximum of 1.9 per day.

Figure 8-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by Jacksonville AGS



COASTAL TOWNSEND

Baseline	ANG Scenario 1	ANG Scenario 2
54	56	57
3,216	3,463	3,544

PALATKA PINECASTLE

	Baseline	ANG Scenario 1	ANG Scenario 2
-L_{dnmr}	<45	57	58
al tions	272	642	765

AVON PARK

	Baseline	ANG Scenario 1	ANG Scenario 2
Noise-L_{dnmr}	51	52	52
Annual Operations	7,664	7,787	7,828

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.

In areas under the Coastal Townsend and Palatka Pinecastle airspace, persons on the ground could perceive an increase in noise. Such increases would likely add to the percentage of the population annoyed by aircraft noise. A few small communities occur under these units, although most land under Palatka Pinecastle consists of the Ocala National Forest. Persons recreating in special land use areas, such as a national forest, may consider additional noise especially intrusive. However, the low number of operations per flying day coupled with the F-35As use of higher altitudes would minimize the potential for repeated low-altitude overflights of a specific location.

Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.

9.0 MCENTIRE JNGB ALTERNATIVE OVERVIEW

9.1 AIRCRAFT TRANSITION

McEntire JNGB would accommodate 18 (ANG Scenario 1) or 24 (ANG Scenario 2) F-35A aircraft. The F-16 mission and 24 aircraft currently at the installation would either be reassigned or retired. Table 9-1 presents the two F-35A beddown scenarios.

Table 9-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*	*F-35A Beddown Scenarios*		*Total*	*Net Change in Aircraft*
	Based F-16	*ANG 1*	*ANG 2*		
McEntire JNGB	24	18		18	-6
			24	24	0

Figure 9-1. McEntire JNGB Construction Projects – ANG Scenarios 1 and 2

9.2 CONSTRUCTION

A total of two facility modification projects and an addition to a building for a simulator would be required to support beddown of the F-35As at McEntire JNGB under either scenario (Figure 9-1 and Table 9-2). Only one of these projects would disturb new ground, affecting less than an acre. Proposed to occur in 2014 and 2016, these projects would cost an estimated $1.2 million.

Table 9-2. Proposed Construction and Modifications for McEntire JNGB

Year	*Action*	*Total Affected Area (acres)*
2014	Provide 28/270V DC Power in Building 253 (6 Bays)	0
2015	Provide 28/270V DC Power in Building 1046 (1 Bay)	0
2016	Addition and Alteration to Building 1057 ECM Pod Shop for new 2-Bay F-35A Simulator	0.76
Total	**Cost: $1,175,000**	**0.76**

9.3 AIRFIELD OPERATIONS

The F-35As would employ similar take-off and landing procedures as currently used by the F-16s at McEntire JNGB. However, the new aircraft operations would include fewer closed patterns overall, thereby reducing total airfield operations (Table 9-3). Flight profiles would also vary somewhat from the F-16s, but the F-35As would adhere to existing restrictions and avoidance procedures. No flying between 10:00 p.m. and 7:00 a.m. would be planned for the F-35As, although other based and transient military aircraft would continue to fly during this period.

Table 9-3. Comparison of ANG Scenarios – Airfield Operations

Aircraft	*ANG Scenario 1*	*ANG Scenario 2*
Based F-16	-12,007	-12,007
Based Army helicopters/other aircraft	18,485	18,485
Transients[1]	582	582
F-35A	5,486	7,296
Total	**24,553**	**26,363**
Percent Change from Baseline	**-21%**	**-15%**

Note: [1]Includes F-15C, KC-135, C-21, A-10, and others.

Under both scenarios, total operations would decrease. These decreases would stem from drawdown of the 24 based F-16s, as well as reductions in pattern work at the airfield.

9.4 PERSONNEL

For ANG Scenario 2, the Air Force expects that existing staffing levels would be sufficient to support operation and maintenance of 24 F-35As at McEntire JNGB. Beddown of six fewer F-35As in ANG Scenario 1 (18 total) would require reduction of 371 (24 percent decrease) fewer military personnel (Table 9-4).

Table 9-4. Proposed Personnel Changes: McEntire JNGB

	Baseline	*Proposed Scenarios*		*Net Change Per Scenario*	
	F-16 Personnel	*F-35A Personnel*			
		ANG 1	ANG 2	ANG 1	ANG 2
Total	**1,554**	**1,183**	**1,554**	**-371**	**0**

9.5 McENTIRE JNGB ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. McEntire JNGB currently accommodates over 31,000 based and transient military aircraft operations each year. Combined, these operations produce noise as reflected by the baseline 65 dB DNL contour depicted in Figure 9-2. This figure overlays the 65 dB DNL contours for both scenarios and baseline conditions at McEntire JNGB. As this comparison demonstrates, 65 dB DNL contours from the two ANG Scenarios are entirely encompassed by the baseline contours. No new areas would be exposed to these noise levels. Contours for ANG Scenarios 1 and 2 would narrow, particularly in the west.

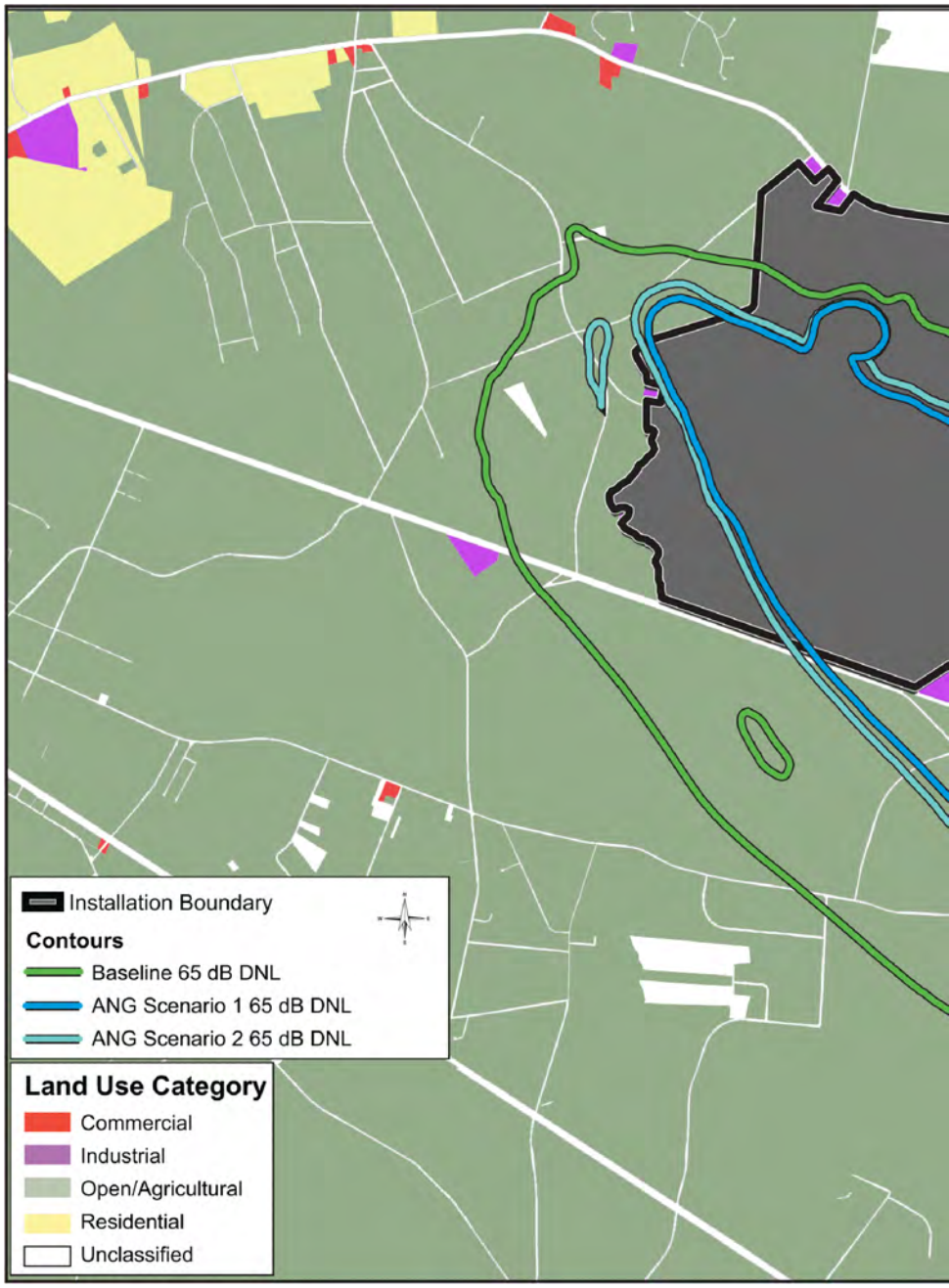
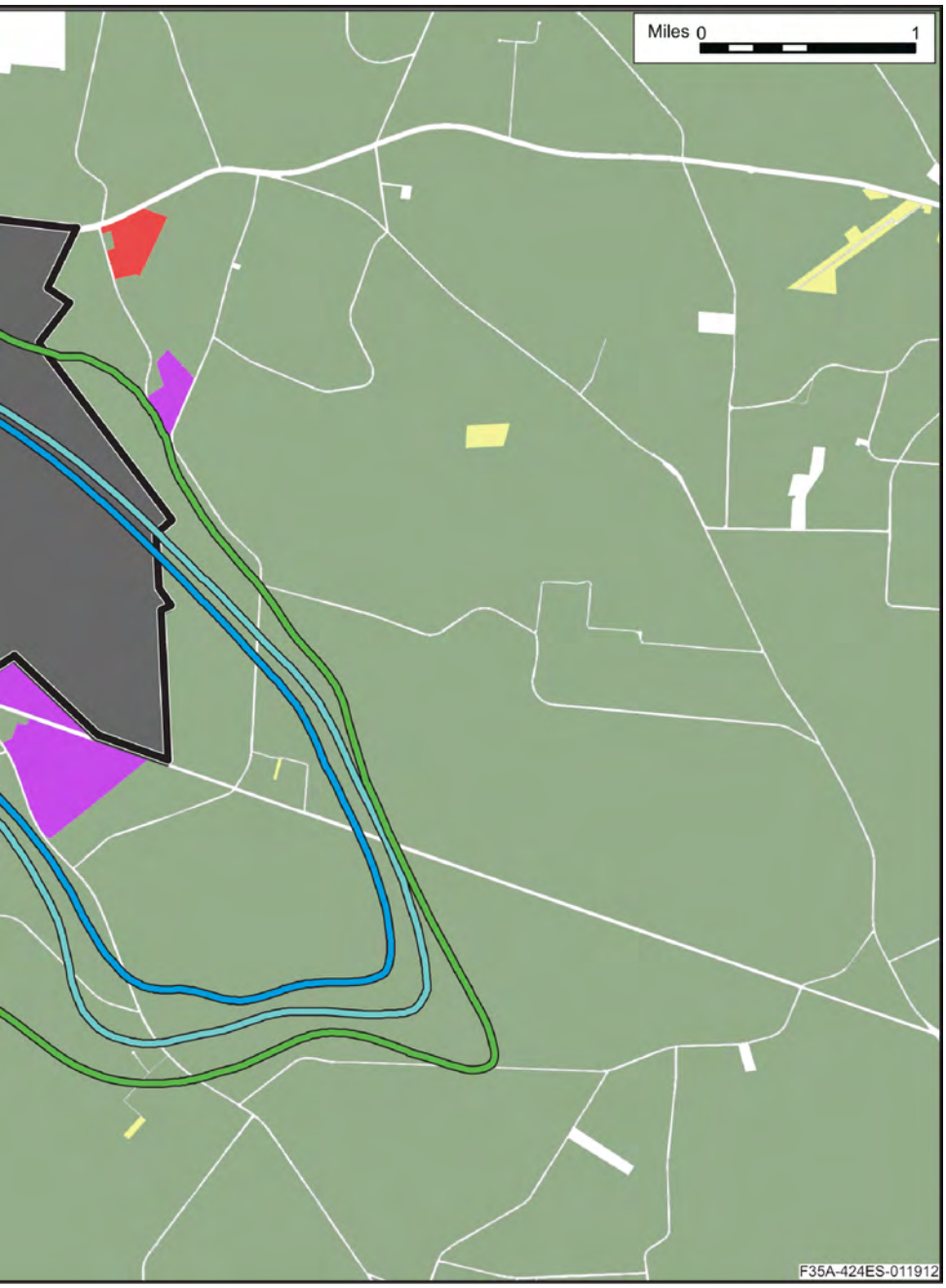


Figure 9-2. McEntire JNGB Comparison of Baseline and Projected 65 dB DNL Noise Contours for Both Scenarios

Under both scenarios, the residential land use subject to noise levels 65 to 75 dB DNL (Table 9-5) would not change. However, areas of non-conforming residential use underlie both baseline and projected noise contours. Review of recent aerial photographs along with information from the U.S. Census revealed these residential uses, despite their non-conformance with zoning. Most of the affected area under the 65 dB DNL contours for both scenarios consists of agricultural lands.

Table 9-5. Change in Acres of Defined Residential Land Use Within the 65 dB DNL and Greater Noise Contour Bands at McEntire JNGB

	Baseline (acres)	*Projected (acres)*	*Change (acres)*
ANG Scenario 1	1	1	0
ANG Scenario 2	1	1	0



As Table 9-6 shows, noise from both ANG Scenario 1 and ANG Scenario 2 would affect substantially fewer acres, people, and households than under baseline conditions. Substantial reductions in affected area would occur west of McEntire JNGB, where the contours narrow.

Noise effects also include impacts from individual overflights. As presented in Table 9-7, the F-35A would generally be louder than the F-16s under most modes of flight as measured by single overflight metrics (SEL and L_{max}).

Table 9-6. Off-Base Noise Exposure under ANG Scenarios 1 and 2 for McEntire JNGB (Proposed/Baseline)

Contour Band (dB DNL)[1]	*Acreage*	*Population*	*Households*
ANG Scenario 1			
65 – 70	1,030/3,152	173/538	64/201
70 – 75	346/804	59/140	22/53
75 – 80	75/222	13/35	5/13
80 - 85	1/2	0/0	0/0
85+	0/0	0/0	0/0
Total	**1,452/4,180**	**245/713**	**91/267**
ANG Scenario 2			
65 – 70	1,371/3,152	222/538	83/201
70 – 75	449/804	76/140	28/53
75 – 80	127/222	22/35	9/13
80 - 85	4/2	1/0	0/0
85+	0/0	0/0	0/0
Total	**1,951/4,180**	**321/713**	**120/196**

Note: [1]Exclusive of upper bound for all bands.

Table 9-7. SEL and L_{max} Comparison for McEntire JNGB

Condition	*Based F-16C*[1, 2]				*F-35A*[2, 3]			
	SEL (dBA)	*L_{max} (dBA)*	*Power (%NC)*	*Speed (kts)*	*SEL (dBA)*	*L_{max} (dBA)*	*Power (%ETR)*	*Speed (kts)*
Afterburner Assisted Take-off[4] (1,000 feet AGL)	117	113	95.5%	300	117	115	100%	300
Military Power Take-off (1,000 feet AGL)	113	110	97%	300	117	115	100%	300
Arrival (non-break, through 1,000 feet AGL, gear down[5])	96	90	85%	180	99	95	40%	180
Overhead Break (downwind leg, 1,250 feet AGL, gear down)	101	94	87%	200	97	92	40%	200
Low Approach and Go (downwind leg, 1,250 feet AGL, gear down)	110	104	94%	250	97	92	40%	210
Radar Pattern (downwind leg, 1,750 feet AGL, gear up)	97	90	87%	250	86	80	30%	250

McEntire JNGB nominal elevation = 252 feet MSL; Weather: 66°F, 50% Relative Humidity; SEL = Sound Exposure Level; L_{max} = Maximum (instantaneous) Sound Level; dBA = A-weighted decibel; NC = Engine core revolutions per minute; kts = knots; ETR = Engine thrust request. *Notes*: All numbers are rounded. [1]Modeled F-16C with F110-GE-100 engine. [2]F-16 Aircraft spend 90 percent of take-off in afterburner compared to 5 percent by the F-35. [3]Modeled with reference acoustic data for an F-35A. [4]Power reduced from afterburner to military power prior to reaching 1,000 feet AGL. [5]F-16C values reflect gear up condition.

Air Quality. Under Scenario 1, emissions would decrease for all seven pollutant categories. For ANG Scenario 2, SO_x would increase minimally. Neither ANG Scenario 1 nor 2 would introduce emissions that would deteriorate regional air quality; the area would remain in attainment for all federal and state air quality standards. Table 9-8 presents the emissions from operations under both scenarios.

Table 9-8. Proposed Annual Operational Emissions under ANG Scenario 1 at McEntire JNGB

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[1]
ANG Scenario 1							
Aircraft	9.03	34.37	0.39	15.04	0.90	0.88	11,767.13
Engine Runups	0.35	0.06	0.01	0.09	0.00	0.00	62.50
AGE[2]	3.86	3.44	0.21	0.97	0.31	0.30	897.54
POVs	37.79	1.80	2.31	0.04	0.10	0.10	1,912.28
Total Annual ANG Scenario 1 Emissions	**53.02**	**39.67**	**2.91**	**16.14**	**1.32**	**1.28**	**14,639**
Baseline Annual Emissions	197.62	127.10	22.64	20.16	8.10	7.60	33,685
Net Change	***-144.60***	***-87.43***	***-19.73***	***-4.02***	***-6.77***	***-6.31***	***-19,045***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**
ANG Scenario 2							
Aircraft	12.01	45.69	0.51	20.00	1.20	1.16	15,645.75
Engine Runups	0.46	0.08	0.01	0.12	0.00	0.00	82.99
AGE[2]	5.13	4.57	0.28	1.29	0.42	0.40	1,193.87
POVs	58.96	2.66	3.43	0.06	0.15	0.15	2,715.22
Total Annual ANG Scenario 2 Emissions	**76.56**	**53.01**	**4.23**	**21.47**	**1.77**	**1.72**	**19,638**
Baseline Annual Emissions	197.62	127.10	22.64	20.16	8.10	7.60	33,685
Net Change	***-121.06***	***-74.09***	***-18.41***	***1.31***	***-6.33***	***-5.88***	***-14,047***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**

Notes:
[1]CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310), (40 CFR 98, Subpart A, Table A-1) in metric tons per year.
[2]With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single engine aircraft, and an extensive, rigorous testing program. Overall, the risks of an aircraft mishap are not expected to increase substantially.

Biological Resources. Under ANG Scenarios 1 and 2, one construction project would produce 0.76 acre of surface disturbance, but would not impact plants, wildlife, wetlands, or special status species. Noise from aircraft operations would decrease, and the wildlife in the area of McEntire JNGB have become habituated to it. As such, no impacts to wildlife or threatened and endangered species would occur. Decreased airfield operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. Similarly, use of higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. There would be no impacts to National Register-eligible or potentially eligible archaeological, architectural, or traditional cultural properties. In October 24, 2012, Section 106 of the National Historic Preservation Act (NHPA) consultation was re-initiated by the Air Force and letters sent to the South Carolina and Georgia SHPOs notifying them that no response had been received from earlier correspondence. The South Carolina SHPO responded requesting definition of the APE and identification of any historic properties that might be impacted (see the EIS, section

Mc3.9.1 for revisions made to address these comments). As of publication of this document, no further correspondence was received from the Georgia SHPO. Project-specific government-to-government consultation was initiated in 2010 when letters were sent to the two federally-recognized American Indian Tribes that potentially have interest in the proposal. No responses were received, nor were any received after the Tribes received copies of the Draft EIS in the Spring of 2012. Another letter was sent in October 2012, to both the Catawba Indian Nation and the East Band of Cherokee Indians, asking for a negative response; however, no responses have been received to date.

Socioeconomics. ANG Scenario 1 would reduce 371 military personnel authorizations associated with McEntire JNGB and decrease military payrolls by $4.5 million. However, the scenario would not impact regional employment, income, or regional housing market. ANG Scenario 2 would retain the same number of military personnel authorizations as under baseline. Either scenario would expend an estimated $1.2 million in 2013 and 2015 for the proposed projects. The McEntire JNGB area would likely provide the skilled workers for the temporary construction jobs.

Environmental Justice. Table 9-9 displays the total, minority, and low-income populations exposed to noise levels 65 dB DNL and greater in the vicinity of McEntire JNGB. Under baseline conditions, the proportion of minority populations affected by noise levels greater than 65 dB DNL is 73 percent, far exceeding both the 32 percent average found at the state level and the 51 percent found in Richland County. For low-income populations, about 12 percent are affected by noise levels 65 dB DNL and greater, representing a significantly less proportion when compared to the 17 and 16 percent low-income population averages found at the state and county levels, respectively. Under both ANG Scenarios 1 and 2, the total number of individuals affected by noise levels 65 dB DNL and greater would decrease by 66 percent (ANG Scenario 1) and 55 percent (ANG Scenario 2). However, the proportion of minority populations affected would increase to 74 percent (1 percent over baseline) and still remain well above state and county levels. For low-income populations, there would be a similar 1 percent increase (to 13 percent) proportionately affected by noise levels 65 dB DNL and greater when compared to baseline conditions. Again, this is significantly less than the 17 percent average at the state level and the 16 percent at the county level. In summary, minority populations are and would continue to be disproportionately affected by noise levels 65 dB DNL and greater; however, the proportion of low-income individuals affected by these noise levels is not and would not be considered disproportionate.

Table 9-9. Minority and Low-Income Populations Affected by 65 dB DNL and Greater Noise Contour Bands at McEntire JNGB

	Total Population	*Minority Population*	*Percent Minority*	*Low-Income Population*	*Percent Low-Income*
Baseline	713	526	73	85	12
ANG Scenario 1	245	186	74	30	13
ANG Scenario 2	321	242	74	39	13

Ground Traffic and Transportation. Despite a negligible, short-term increase in construction traffic, ANG Scenario 1 would reduce travel demand by 24 percent for the base. However, no effects on the Level of Service (LOS) for any portion of the roadway network would be expected. Baseline personnel levels would continue for ANG Scenario 2, and would not affect any LOS thresholds.

Other Resources. The EIS analyzed the potential environmental consequences of implementing ANG Scenario 1 and 2 on three other resources: geology, soils, and water (Mc3.5 in the EIS); community

facilities and public services (Mc3.13); and hazardous materials and waste (Mc3.15). No aspect of the beddown scenarios would result in impacts to these resources.

Airspace and Range Use. Figure 9-3 depicts the main overland airspace and range units proposed for use by the F-35As. Data presented in the figure include total annual F-16 aircraft operations under baseline, ANG Scenario 1, and ANG Scenario 2. Such operations would fall below baseline levels in both ANG Scenario 1 and ANG Scenario 2. The F-35As would also fly more time at higher altitudes than the F-16s, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 10 to 30 percent by the F-16s.

The F-35As from McEntire JNGB would primarily use the existing Bulldog, Gamecock, Poinsett, and Coastal Townsend airspace units. The Fox VFR Operating Area would receive limited use, and Avon Park would get used rarely, if at all. For all airspace units, operations per flying day would decrease below baseline in both scenarios. In turn, low-altitude operations would also decrease.

F-35As from McEntire JNGB would also fly in overwater Warning Areas, although to a lesser degree than current conditions. Required supersonic operations would be conducted only in these Warning Areas, at least 15 nautical miles offshore or above 30,000 feet MSL. Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. For Bulldog and Gamecock, subsonic noise levels would increase imperceptibly (i.e., 1 to 2 dB) under both scenarios. Neither would exceed 65 dB. Although the Poinsett airspace and associated range would continue to experience noise levels of 68 L_{dnmr}, no change from baseline noise levels would occur under either scenario. Noise levels in Coastal Townsend airspace would increase perceptibly in ANG Scenario 2, but not in ANG Scenario 1.

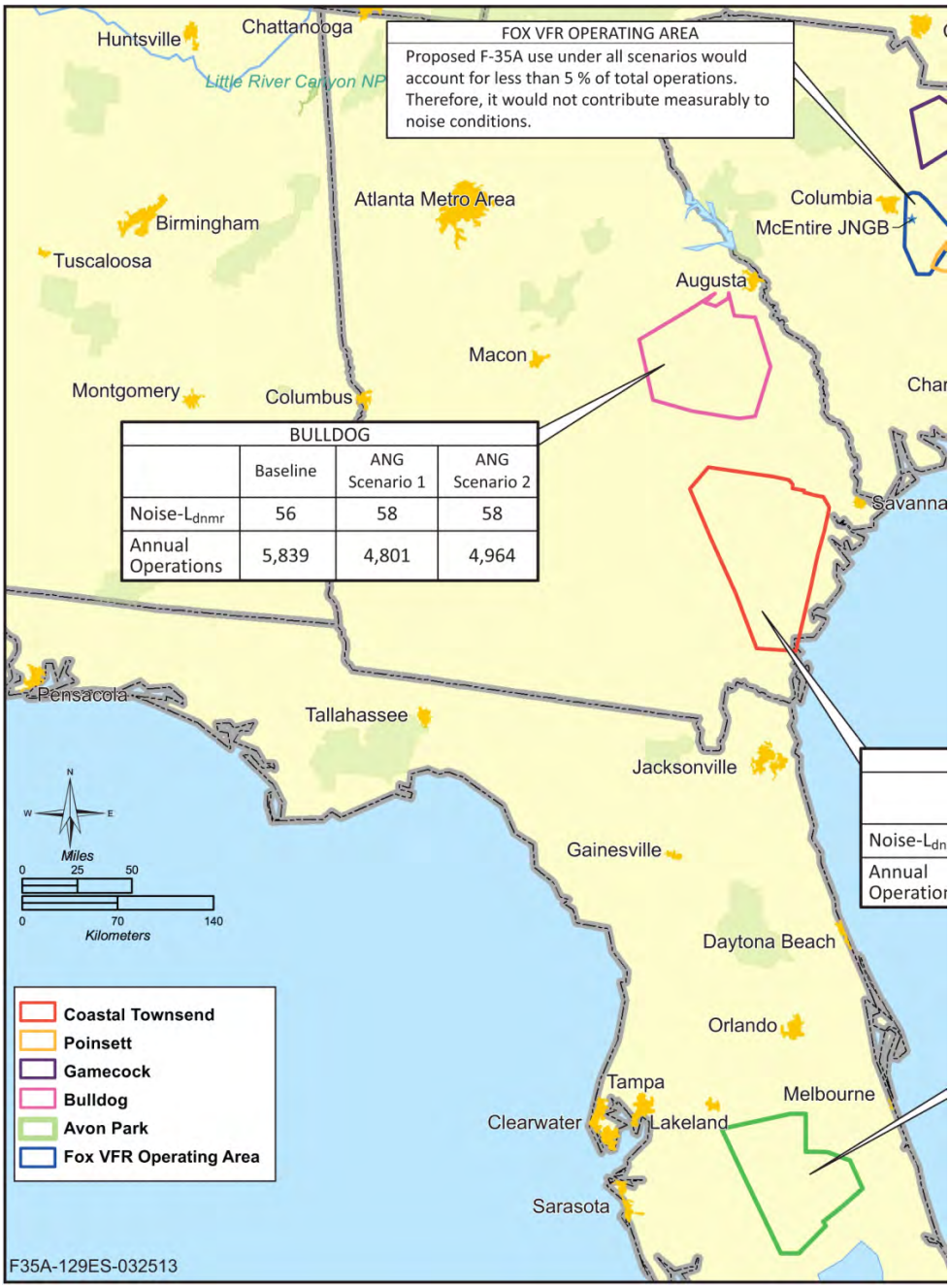
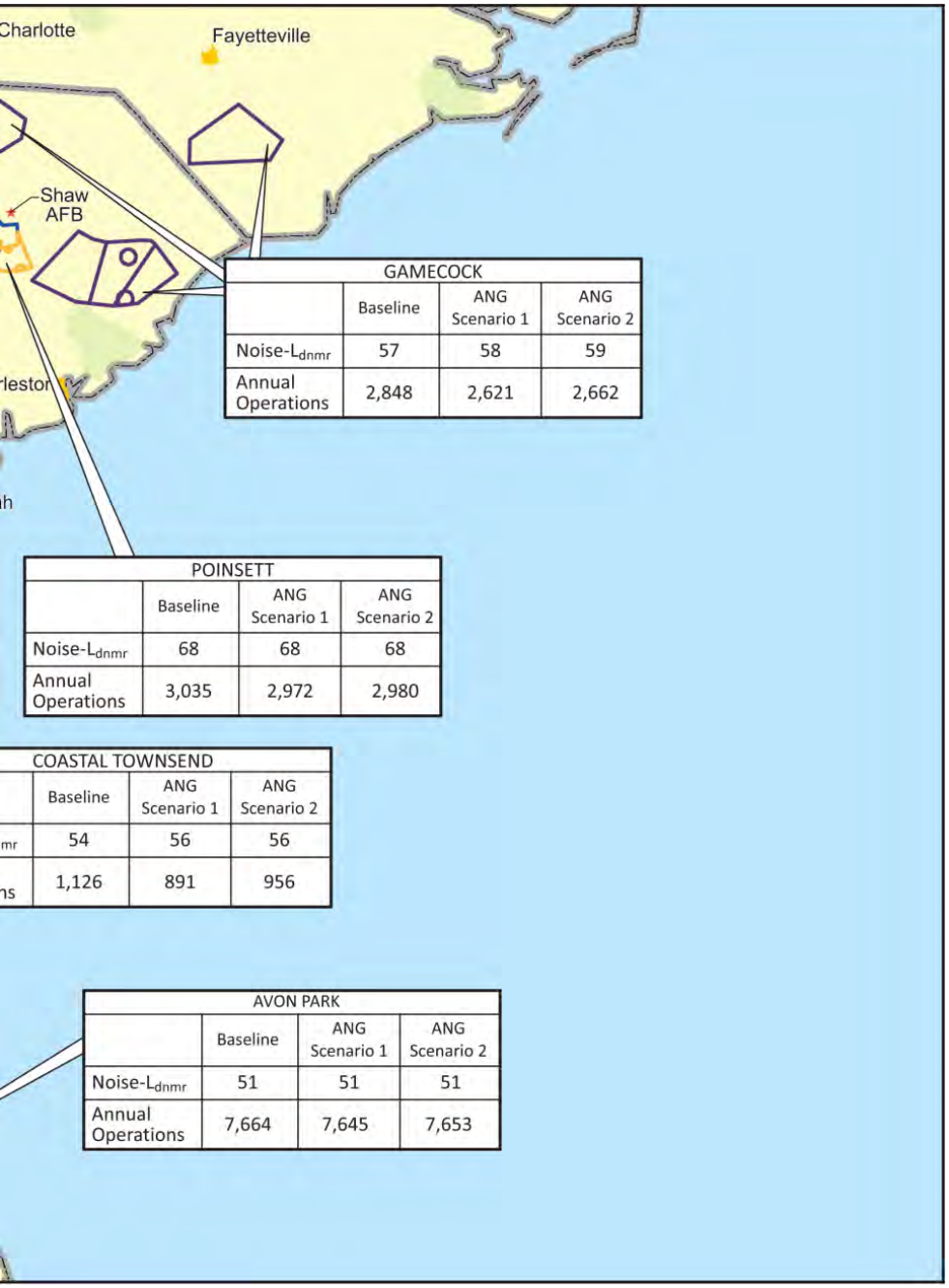


Figure 9-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by McEntire JNGB

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.

In areas under Coastal Townsend airspace, persons on the ground could perceive an increase in noise if ANG Scenario 2 were implemented. Such increases would likely add to the percentage of the population annoyed by aircraft noise. Several communities underlie this airspace, including Hinesville with a population of more than 30,000. The F-35As would continue to avoid these communities in accordance with Federal Aviation Administration regulations. Persons recreating in special land use areas, such as state parks, may consider additional noise especially intrusive. However, the low number of operations per flying day coupled with the F-35As use of higher altitudes would minimize the potential for repeated low-altitude overflights of a specific location.



GAMECOCK	Baseline	ANG Scenario 1	ANG Scenario 2
Noise-L_{dnmr}	57	58	59
Annual Operations	2,848	2,621	2,662

POINSETT	Baseline	ANG Scenario 1	ANG Scenario 2
Noise-L_{dnmr}	68	68	68
Annual Operations	3,035	2,972	2,980

COASTAL TOWNSEND	Baseline	ANG Scenario 1	ANG Scenario 2
mr	54	56	56
ns	1,126	891	956

AVON PARK	Baseline	ANG Scenario 1	ANG Scenario 2
Noise-L_{dnmr}	51	51	51
Annual Operations	7,664	7,645	7,653

Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.

10.0 MOUNTAIN HOME AFB ALTERNATIVE OVERVIEW

10.1 AIRCRAFT TRANSITION

Mountain Home AFB would accommodate 24 (ACC Scenario 1), 48 (ACC Scenario 2), or 72 (ACC Scenario 3) F-35A aircraft. The F-35A aircraft would add to the existing inventory of 56 F-15E/SGs; no aircraft would be drawn down at the base. Table 10-1 presents the three F-35A beddown scenarios.

Table 10-1. Baseline and Proposed Aircraft Beddown

Base	*Existing Aircraft*	*F-35A Beddown Scenarios*			*Total*	*Net Change in Aircraft*
	Based F-15E/SG	*ACC 1*	*ACC 2*	*ACC 3*		
Mountain Home AFB[1]	56	24			80	+24
			48		104	+48
				72	128	+72

Note:
[1]No drawdown of existing aircraft would occur. The 56 based F-15Es/SGs would remain and operate after any F-35A beddown.

Figure 10-1. Mountain Home AFB Construction Projects – ACC Scenarios 1, 2, and 3

10.2 CONSTRUCTION

A maximum of 21 facility construction, modification, and renovation projects would be required to support beddown of the F-35As at Mountain Home AFB under ACC Scenario 3 (Figure 10-1 and Table 10-2). Four and seventeen projects, respectively, would be required for the other two scenarios. Approximately 11 acres of previously disturbed ground would be affected. Proposed to occur from 2014 to 2015, the construction would cost an estimated $52 million under ACC Scenario 3, with lesser amounts for the other scenarios.

Table 10-2. Proposed Construction and Modifications for Mountain Home AFB

Year	*Action*	*Total Affected Area (acres)*
ACC Scenario 1 (24 F-35As)		
2014	New Munitions Storage, Hayman Igloo	0.44
2014	New F-35A Parts Storage Facility	0.83
2014	New 4-Bay Fight Simulator Facility	1.29
2014	New Munitions Inspection Facility	0.61
ACC Scenario 1 Total Cost: $16,900,000		**3.17**
ACC Scenario 2 (48 F-35As) adds the following to Scenario 1		
2014	New Vehicle Maintenance, Building 1100	0.36
2014	New Munitions Administration Facility	0.66
2014	New Munitions Inspection Facility	0.61
2015	Internal Alterations to Squad Operations, Building 196	0
2015	Internal Alterations to Squad Operations, Building 271	0
2015	Internal Alterations to Squad Operations, Building 278	0
2015	Internal Alterations to Squad Operations, Building 210	0
2015	Internal Alterations, Building 277	0
2015	Internal Alterations, Building 211	0
2015	Construct Airfield markings	0
2015	Addition and Alteration to Weapons Release Shop, Building 1225	0.83
2015	Construct HAMS Yard	1.29
2015	Construct R-11 petroleum, oil, and lubricants Parking	0.87
2015	Repair Multiple Hangars, electrical upgrade	0
2015	MSA Mobility Equipment Storage	0.51
ACC Scenario 2 Total Cost: $36,348,000		**8.98**
ACC Scenario 3 (72 F-35As) adds the following to Scenarios 1 and 2		
2015	New Squadron Operations and AMU facility	2.08
2015	New 6-Bay Fight Simulator Facility	1.48
ACC Scenario 3 Total Cost: $51,948,000		**11.39**

10.3 AIRFIELD OPERATIONS

The F-35As would employ generally similar take-off and landing procedures as currently used by the F-15E/SGs at Mountain Home AFB. While the new aircraft would fly fewer closed patterns overall, the F-35A operations would be additive to existing airfield operations (Table 10-3). Flight profiles would also vary somewhat from the F-15E/SGs, but the F-35As would adhere to existing restrictions and avoidance procedures. About 0.6 percent of the time, the F-35A would fly between 10:00 p.m. and 7:00 a.m. and operations during environmental night would increase by less than one per day. Existing F-15E/SG aircraft would continue to fly 12 percent of the time during this period.

Table 10-3. Comparison of ACC Scenarios – Airfield Operations

Aircraft	*ACC Scenario 1*	*ACC Scenario 2*	*ACC Scenario 3*
Based F-15E/SG	28,766	28,766	28,766
Transients[1]	3,846	3,846	3,846
F-35A	10,667	21,334	32,001
Total	**43,279**	**53,946**	**64,613**
Percent Increase from Baseline	**+32.7%**	**+65.4%**	**+98.1%**

Note: [1]Transients include Gowen Field aircraft pattern work, F-15C, KC-135, C-21, A-10, and others.

10.4 PERSONNEL

Staffing levels to support operation and maintenance of F-35A aircraft would increase under all scenarios (Table 10-4), with the F-35A personnel added to existing base personnel. Under ACC Scenario 3, total military personnel authorizations for the base would increase by 39 percent, with lesser increases for the other scenarios.

Table 10-4. Proposed Personnel Changes: Mountain Home AFB

Aircraft	***Baseline***	***Proposed Scenarios***		
	F-15E/SG Personnel	*F-35A Personnel*		
		ACC 1	***ACC 2***	***ACC 3***
F-15E/SG	1,306	1,306	1,306	1,306
F-35A	0	532	1,064	1,596
BOS Personnel	N/A	53	106	159
Total Personnel	**1,306**	**1,891**	**2,476**	**3,061**
Net Change	**N/A**	**+585**	**+1,170**	**+1,755**

10.5 MOUNTAIN HOME AFB ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. Mountain Home AFB accommodates a total of over 30,000 military aircraft operations per year, including those by based F-15E/SGs, as well as transient aircraft. These operations produce noise as reflected by the baseline 65 dB DNL contour depicted in Figure 10-2.

This figure overlays the 65 dB DNL contours for all three ACC Scenarios at Mountain Home AFB. As this comparison indicates, the 65 dB DNL contour from the scenarios would exceed the baseline, but not by much. All off-base areas within the 65 dB DNL contour consist of open/agricultural lands.

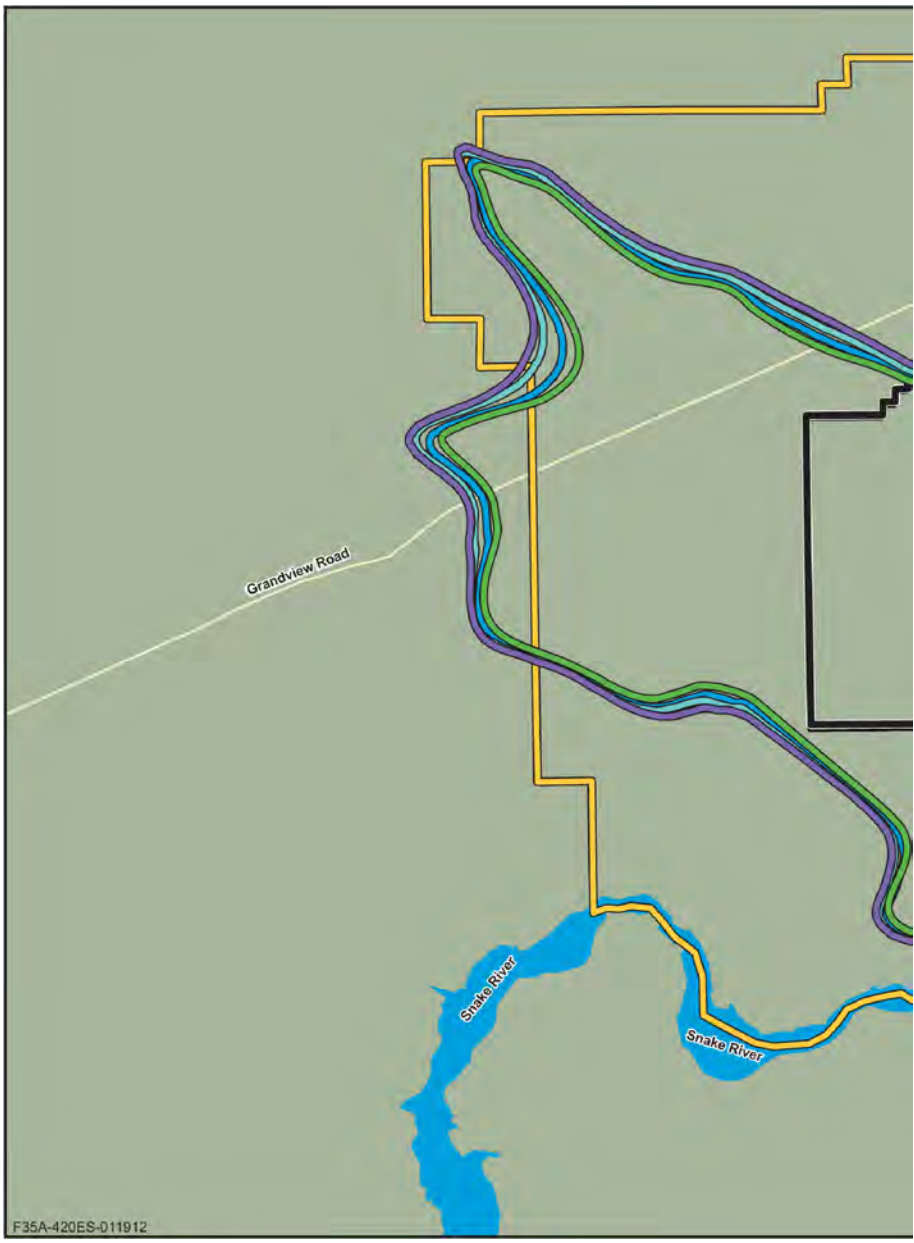


Figure 10-2. Mountain Home AFB Comparison of Baseline and Projected 65 dB DNL Noise Contours for All Scenarios

No residential lands underlie the affected area, although a single ranch residence does occur to the west of the base and underlies the 75 to 80 dB DNL contours. Land use defined under the Elmore County Air Base Hazard Zone has prevented encroachment and promoted compatible uses of private lands around the base.

Table 10-5 on the next page shows, more acres would be affected by noise levels of 65 dB or greater under the ACC Scenarios compared to baseline. No zoned residential areas would fall within the 65 dB DNL contours. Noise effects also include impacts from individual overflights. As presented in Table 10-6, the F-35A would generally be louder than the F-15E/SGs under most modes of flight (except afterburner/take-off/re-entry/radar patterns) as measured by single overflight metrics (SEL and L_{max}).

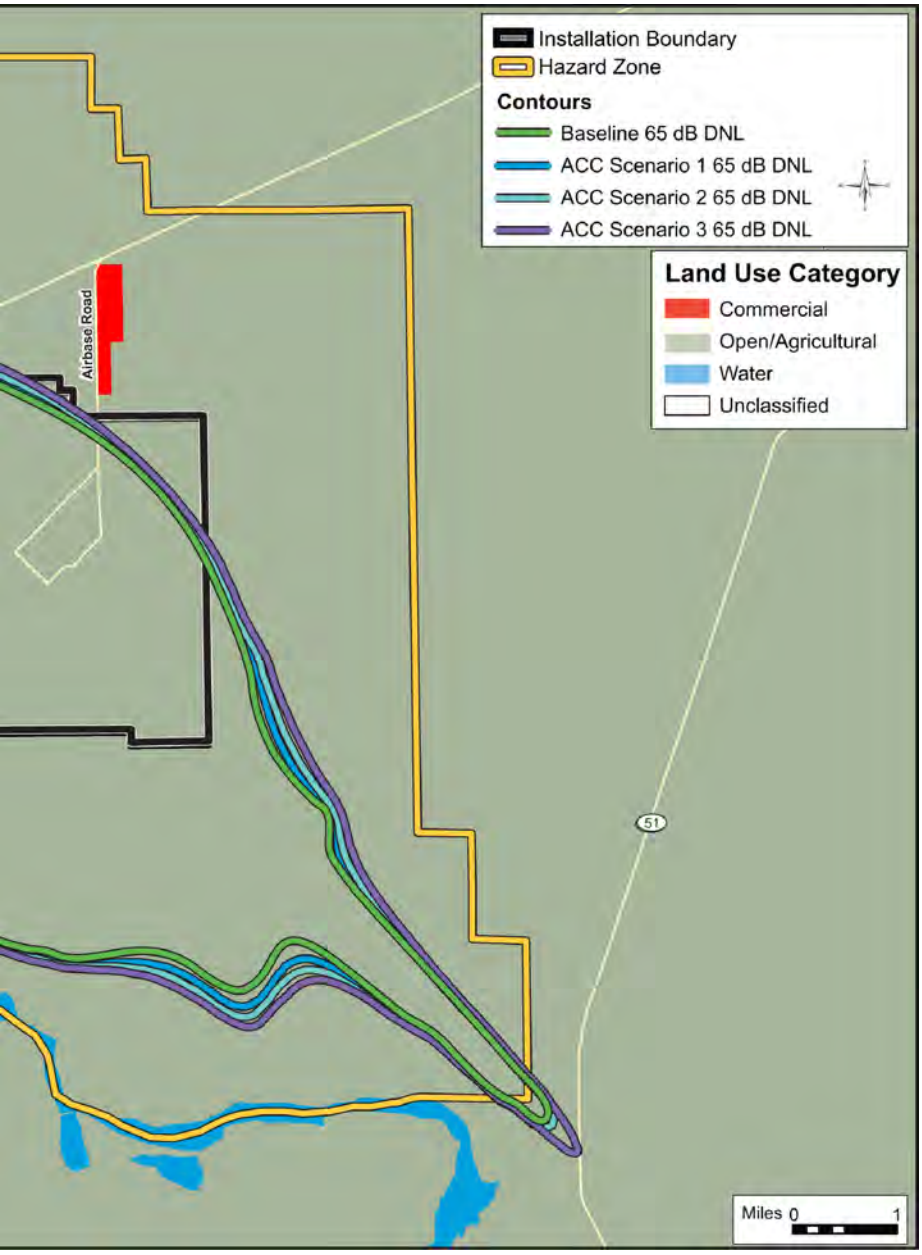


Table 10-5. Off-Base Noise Exposure under ACC Scenarios 1, 2, and 3 for Mountain Home AFB (Proposed/Baseline)

Contour Band (dB DNL)[1]	*Acreage*	*Population*	*Households*
ACC Scenario 1			
65 – 70	9,056/8,504	0/0	0/0
70 – 75	4,131/3,87	0/0	0/0
75 – 80	1,445/1,292	3/3	1/1
80 – 85	178/135	0/0	0/0
85+	0/0	0/0	0/0
Total	**14,810/13,805**	**3/3**	**1/1**
ACC Scenario 2			
65 – 70	9,658/8,504	0/0	0/0
70 – 75	4,409/3,874	0/0	0/0
75 – 80	1,602/1,292	3/3	1/1
80 – 85	222/135	0/0	0/0
85+	0/0	0/0	0/0
Total	**15,891/13,805**	**3/3**	**1/1**
ACC Scenario 3			
65 – 70	10,275/8,504	0/0	0/0
70 – 75	4,691/3,874	0/0	0/0
75 – 80	1,746/1,292	3/3	1/1
80 – 85	548/135	0/0	0/0
85+	0/0	0/0	0/0
Total	**17,260/13,805**	**3/3**	**1/1**

Note: [1]Exclusive of upper bound for all bands.

Table 10-6. SEL and L_{max} Comparison for Mountain Home AFB

Condition	Based F-15E/SG[1]				F-35A[2]			
	SEL (dBA)	L_{max} (dBA)	Power (%NC)	Speed (kts)	SEL (dBA)	L_{max} (dBA)	Power (%ETR)	Speed (kts)
Afterburner Assisted Take-off[3] (1,000 feet AGL)	116	108	92%	300	116	113	100%	300
Military Power Take-off (1,000 feet AGL)	116	108	92%	300	116	113	100%	300
Arrival (non-break, through 1,000 feet AGL, gear down[4])	104	95	83%	155	99	95	40%	180
Overhead Break (downwind leg, 1,800 feet AGL, gear down)	80	73	72%	200	94	88	40%	200
Low Approach and Go (downwind leg, 1,800 feet AGL, gear down)	96	87	82%	200	94	88	40%	210
Re-entry Pattern (downwind leg, 1,300 feet AGL, gear up)	94	87	80%	300	84	79	30%	300
Radar Pattern (downwind leg, 1,300 feet AGL, gear up)	97	90	82%	300	85	80	30%	250

Mountain Home AFB nominal elevation = 2,996 feet MSL; Weather: 55°F, 47% Relative Humidity; SEL = Sound Exposure Level; L_{max} = Maximum (instantaneous) Sound Level; dBA = A-Weighted Decibel; NC = Engine core revolutions per minute; kts = knots; ETR = Engine thrust request.
Notes: All numbers are rounded. [1]Modeled F-15E/SG with F110-PW-229 engine. [2]Modeled with reference acoustic data for an F-35A. [3]Power reduced from afterburner to military power prior to reaching 1,000 feet AGL. [4]F-15E/SG values reflect gear-up conditions.

Air Quality. Under all three scenarios, emissions would increase for all major pollutant categories. However, the area enjoys good air quality and none of the scenarios would introduce emissions that would affect regional air quality. The area would remain in attainment for all federal and state air quality standards. As an example, Table 10-7 presents the emissions from operations under ACC Scenario 3 which supports the largest number of aircraft and operations.

Table 10-7. Proposed Annual Operational Emissions under ACC Scenario 3 at Mountain Home AFB

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[1]
Aircraft	49.98	207.86	2.10	5.19	0.73	0.73	68,569.89
Engine Run-Ups	1.51	0.24	0.04	0.06	0.00	0.00	264.26
AGE[2]	39.65	35.37	7.78	9.62	11.67	11.32	4,615.93
POVs	109.66	4.95	6.37	0.11	0.29	0.29	5,270.28
Total Annual ACC Scenario 3 Emissions	**200.80**	**248.41**	**16.29**	**14.98**	**12.69**	**12.69**	**74,115.75**
Baseline Annual Emissions	514.34	421.22	61.43	13.46	28.57	22.51	68,582
Net Change	***715.13***	***669.63***	***77.72***	***28.44***	***41.26***	***35.20***	***142,698.21***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**

Notes:
[1]CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310), (40 CFR 98, Subpart A, Table A-1) in metric tons per year.
[2]With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single engine aircraft, and an extensive, rigorous testing program. Overall, the risks of an aircraft mishap are not expected to increase substantially.

Biological Resources. Under ACC Scenario 3, a total of 11.39 acres of previously disturbed ground would be affected. This construction would not impact plants, wildlife, wetlands, or special status species. Noise from aircraft operations would increase, but the wildlife in the area of Mountain Home AFB have become habituated to it. As such, no impacts to wildlife, threatened and endangered species, wetlands, or plants would occur. Increased airfield operations would result in an increased opportunity for bird/wildlife-aircraft strikes to occur; however, use of higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. There would be no impacts to National Register eligible or potentially eligible archaeological, architectural, or traditional cultural properties. In October 2012, Section 106 of the National Historic Preservation Act (NHPA) consultation was re-initiated by Mountain Home AFB and letters sent to the Idaho, Nevada, and Oregon SHPOs notifying them that no response had been received from earlier correspondence in December 2010. In the October 2012 letter the Air Force requested that only negative responses be sent. To date, no negative responses have been received. Project specific, government-to-government consultation letters were sent to six federally-recognized American Indian Tribes in October 2012: Shoshone-Bannock Tribes, Northwester Band of Shoshone, Summit Lake Paiute Tribe, Paiute-Shoshone Tribes of Fort McDermitt, and the Burns Paiute Tribe. In addition, the Shoshone-Paiute Tribes of Duck Valley were sent a government-to-government consultation letter in November 2012. All letters requested responses by the end of November 2012;

however, as of publication of this document no responses were received from the six American Indian Tribes.

Socioeconomics. ACC Scenario 1 would result in an increase of 585 military and civilian personnel authorizations; with an annual increase of approximately $22.7 million in salaries. As an indirect effect, this would result in an estimated increase of 240 jobs with $10.8 million in labor income. ACC Scenario 2, with an increase of 1,170 military and civilian personnel authorizations, would result in $45.3 million in salaries directly and an estimated increase of 479 indirect jobs and $21.6 million in labor income. ACC Scenario 3 would increase military and civilian personnel authorizations by 1,755 with a payroll of $68.0 million in salaries. ACC Scenarios 1, 2, and 3 would also expend an estimated $17 million, $36 million, and $52 million in 2013 through 2015 for proposed construction projects.

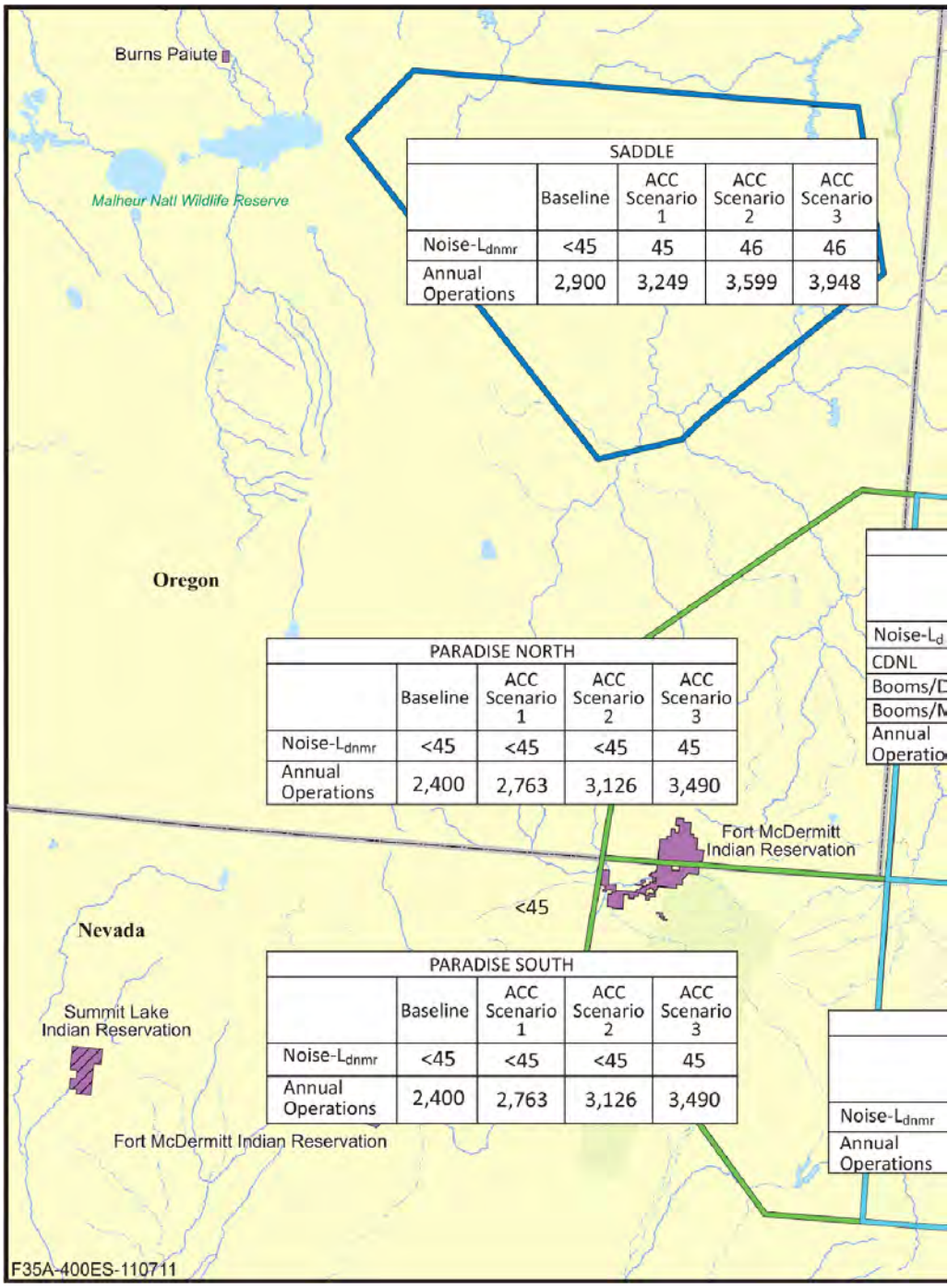
Environmental Justice. Analysis shows that the total population of three persons affected by off-base noise of 65 dB DNL and greater includes no minorities or low-income individuals. As such, there would be no disproportionate effects on minority or low-income individuals under any of the scenarios.

Ground Traffic and Transportation. Short-term increases in construction traffic would not affect the Level of Service (LOS) under any scenario. All three scenarios would increase traffic, particularly during peak hours. ACC Scenarios 1 and 2 would result in traffic increases that exceed the primary LOS threshold, but not the secondary and more critical threshold. ACC Scenario 3 would exceed both thresholds, resulting in a reduction of LOS for portions of the roadway network.

Other Resources. The EIS analyzed the potential environmental consequences of implementing ACC Scenarios 1, 2, and 3 on three other resources: geology, soils, and water (MH3.5 in the EIS); community facilities and public services (MH3.13); and hazardous materials and waste (MH3.15). No aspect of the beddown scenarios would result in impacts to geology, soils, and water or hazardous materials and waste. Addition of military personnel and dependents under all three scenarios would require the City of Mountain Home and Elmore County to adjust community and public services to these new levels. However, both have the capacity to accommodate these changes without diminishment of current conditions.

Airspace and Range Use. Figure 10-3 depicts the main airspace and range units proposed for use by the F-35As. Data presented in the figure includes total annual operations for all aircraft under baseline, ACC Scenarios 1, 2, and 3. With addition of the F-35As, the total annual operations would increase in all airspace units under each proposed scenario. The F-35As, however, would fly more time at higher altitudes than the F-15E/SGs, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 24 percent by the F-15E/SG.

Required supersonic operations would be conducted only in Jarbidge and Owyhee, where supersonic flight is currently authorized. Supersonic flight would occur above 15,000 feet MSL, with 90 percent occurring above 30,000 feet MSL. Supersonic flight over the Duck Valley Indian Reservation would continue to be prohibited.



SADDLE

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	45	46	46
Annual Operations	2,900	3,249	3,599	3,948

PARADISE NORTH

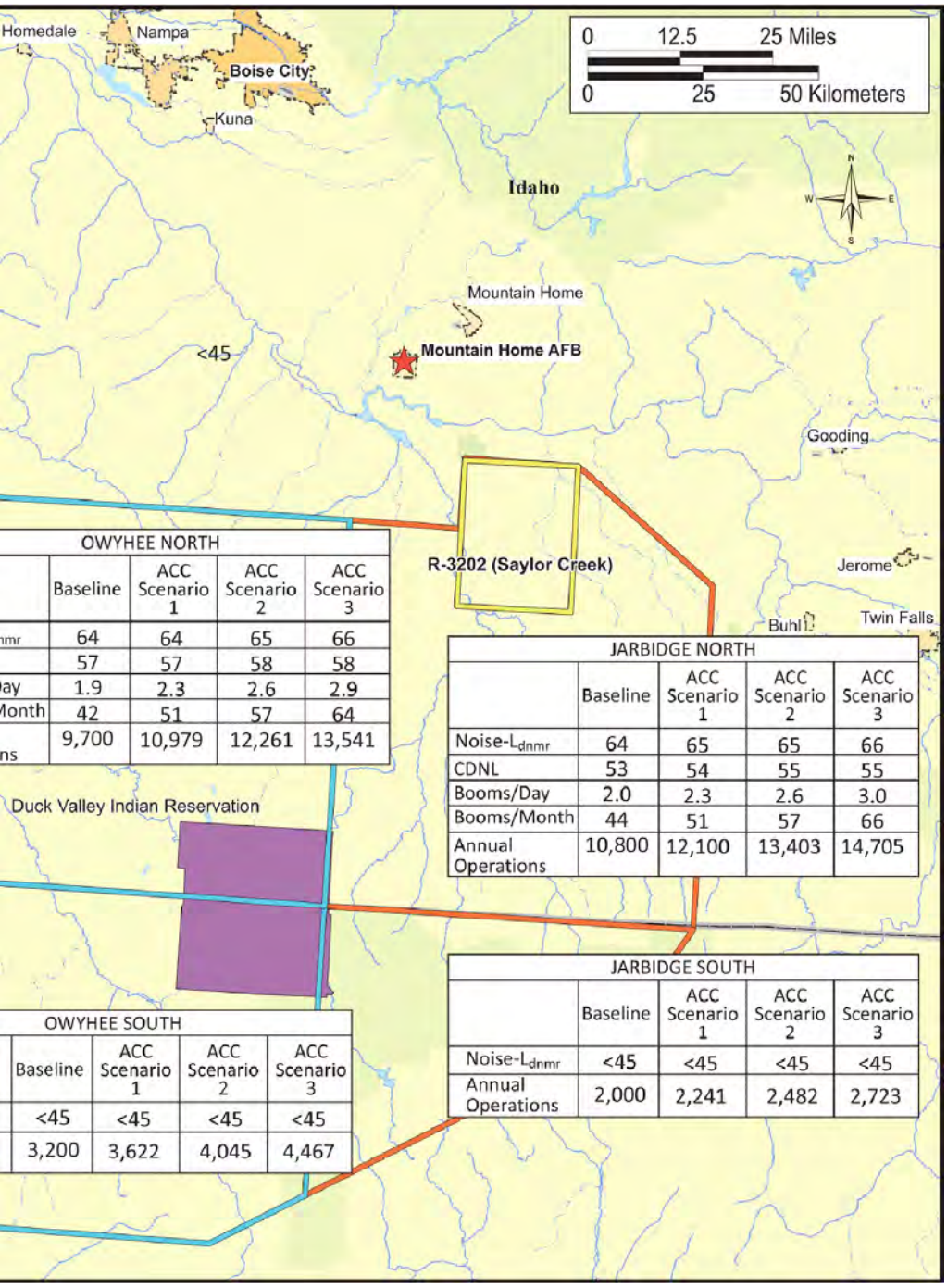
	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	<45	<45	45
Annual Operations	2,400	2,763	3,126	3,490

PARADISE SOUTH

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	<45	<45	45
Annual Operations	2,400	2,763	3,126	3,490

Figure 10-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by Mountain Home AFB

Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. Under ACC Scenarios 1 and 2, subsonic noise would either not change or increases would be imperceptible. Noise levels in Jarbidge North and Owyhee North would be 64 to 65 dB Ldnmr in these scenarios. Under ACC Scenario 3, noise levels would increase imperceptibly by 2 dB in Owyhee North and Jarbidge North. Noise levels would remain at or near below 45 dB Ldnmr in all scenarios for the other airspace units. The number of sonic booms would increase 22 per month in Jarbidge North and 22 per month in Owyhee North under ACC Scenario 3.



OWYHEE NORTH

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
nmr	64	64	65	66
	57	57	58	58
ay	1.9	2.3	2.6	2.9
Month	42	51	57	64
ns	9,700	10,979	12,261	13,541

JARBIDGE NORTH

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	64	65	65	66
CDNL	53	54	55	55
Booms/Day	2.0	2.3	2.6	3.0
Booms/Month	44	51	57	66
Annual Operations	10,800	12,100	13,403	14,705

JARBIDGE SOUTH

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	<45	<45	<45	<45
Annual Operations	2,000	2,241	2,482	2,723

OWYHEE SOUTH

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
	<45	<45	<45	<45
	3,200	3,622	4,045	4,467

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.

Under ACC Scenarios 2 and 3 under Owyhee and Jarbidge, persons on the ground would perceive an increase in noise. While the population beneath the airspace is sparse, a few communities and two American Indian Reservations would be affected. Such increases would likely add to the percentage of the population annoyed by aircraft noise. For the Duck Valley Indian Reservation, continued adherence to avoidance requirements would limit the noise exposure to its residents. Persons recreating in special land use areas, such as wilderness areas, may consider additional noise especially intrusive. A noticeable increase in sonic booms in the Jarbidge and Owyhee airspaces would add to this annoyance and sense of intrusion.

Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.

11.0 SHAW AFB ALTERNATIVE OVERVIEW

11.1 AIRCRAFT TRANSITION

Shaw AFB would accommodate 24 (ACC Scenario 1), 48 (ACC Scenario 2), or 72 (ACC Scenario 3) F-35A aircraft. The F-16 mission and 72 aircraft currently at the installation would either be reassigned or retired. Table 11-1 presents the three F-35A beddown scenarios.

Table 11-1. Baseline and Proposed Aircraft Beddown

Base	*Aircraft Drawdown*	*F-35A Beddown Scenarios*			*Total*	*Net Change in Aircraft*
	Based F-16	*ACC 1*	*ACC 2*	*ACC 3*		
Shaw AFB	72	24			24	-48
			48		48	-24
				72	72	0

Figure 11-1. Shaw AFB Construction Projects – ACC Scenarios 1, 2, and 3

11.2 CONSTRUCTION

A total of up to nine facility construction, modification, and renovation projects for each of the three ACC scenarios would be required to support beddown of the F-35As at Shaw AFB beginning in 2014 (Figure 11-1 and Table 11-2). Approximately 5.5 acres of previously disturbed ground would be affected. The primary difference between the three scenarios is the internal alteration of one Squadron Operations Facility per scenario (i.e., one for ACC Scenario 1; two for ACC Scenario 2; and three for ACC Scenario 3).

Table 11-2. Proposed Construction and Modifications for Shaw AFB

Year	*Action*	*Total Affected Areas (acres)*
ACC Scenario 1 (24 F-35As)		
2014	Construction of a new F-35A 6-Bay Flight Simulator	2.15
2014	Construction of a new F-35A 6-Bay Flight Simulator: roadways and new parking areas	0.89
2014	Internal alteration of 1 Squadron Operation Facility, Building 1610	0
2014	Internal alteration of 1 Aircraft Maintenance Unit (AMU), Building 1629	0
2014	Internal alteration of Parts Storage Facility (Building 1614)	0
2014	Alternative Location - New Parts Storage Facility	2.09
2014	Repair Hayman Igloo	0.35
2016	Addition and Alteration Various Facilities	0
ACC Scenario 1 Total Cost: $22,150,000		**5.48**
ACC Scenario 2 (48 F-35As) adds or revises the following to Scenario 1		
2014	Internal alteration of 2 Squadron Operation Facilities, Buildings 1605 and 1606	0
2014	Internal alteration of 2 AMUs, Buildings 1627 & 1628	0
ACC Scenario 2 Total Cost: $22,300,000		**5.48**
ACC Scenario 3 (72 F-35As) adds or revises the following to Scenario 1 and Scenario 2		
2014	Internal alteration of 3 Squadron Operation Facilities, Buildings 1605, 1606, and 1610	0
2014	Internal alteration of 3 AMUs, Buildings 1627, 1628, & 1629	0
ACC Scenario 3 Total Cost: $22,450,000		**5.48**

Note: *Total calculation included above with construction of new flight simulator facility.

11.3 AIRFIELD OPERATIONS

The F-35As would employ generally similar take-off and landing procedures as currently used by the F-16s at Shaw AFB. However, the new aircraft would fly fewer closed patterns overall, thereby reducing total airfield operations (Table 11-3). Flight profiles would also vary somewhat from the F-16s, but the F-35As would adhere to existing restrictions and avoidance procedures. About 0.6 percent of the time, the F-35A would fly between 10:00 p.m. and 7:00 a.m., resulting in a decrease in total operations during environmental night under all scenarios.

Table 11-3. Comparison of ACC Scenarios – Airfield Operations

Aircraft	*ACC Scenario 1*	*ACC Scenario 2*	*ACC Scenario 3*
Based F-16	-45,094	-45,094	-45,094
Transients[1]	3,450	3,450	3,450
F-35A	10,667	21,334	32,001
Total	**14,117**	**24,784**	**35,451**
Percent Change from Baseline	**-70.9%**	**-48.9%**	**-26.9%**

Note: [1]Transients include visiting F-15C, KC-135, C-21, A-10, other.

Table 11-4. Proposed Military Personnel Changes: Shaw AFB

Aircraft	*Baseline*	*Proposed Scenarios*		
	F-16 Personnel	*F-35A Personnel*		
		ACC 1	ACC 2	ACC 3
F-16	1,905	-1,905	-1,905	-1,905
F-35A	0	532	1,064	1,596
BOS Personnel	N/A	53	106	159
Total Personnel	**1,905**	**585**	**1,170**	**1,755**
Net Change	**N/A**	**-1,320**	**-735**	**-150**

11.4 PERSONNEL

Staffing levels to support operation and maintenance of 24 F-35As at Shaw AFB and the replacement of 72 F-16 aircraft would reduce personnel authorizations by 1,320 under ACC

Scenario 1 (Table 11-4). In the maximum case (ACC Scenario 3), the addition of 72 F-35As would decrease total personnel authorizations by 150.

11.5 SHAW AFB ENVIRONMENTAL CONSEQUENCES

Noise and Land Use. Shaw AFB currently accommodates over 48,000 total operations each year. Combined with other based and transient military aircraft, the based F-16 operations produce noise as reflected by the baseline 65 dB DNL contour depicted in Figure 11-2. Contours (65 dB DNL) for ACC Scenarios 1, 2, and 3 are overlaid onto the baseline contour. As this comparison shows, ACC Scenarios 1, 2, and 3 noise affects narrower but longer areas than baseline noise contours. Much of the affected area would continue to consist of open/agricultural lands. Industrial lands off the ends of the base would continue to be affected by higher noise levels compared to baseline.

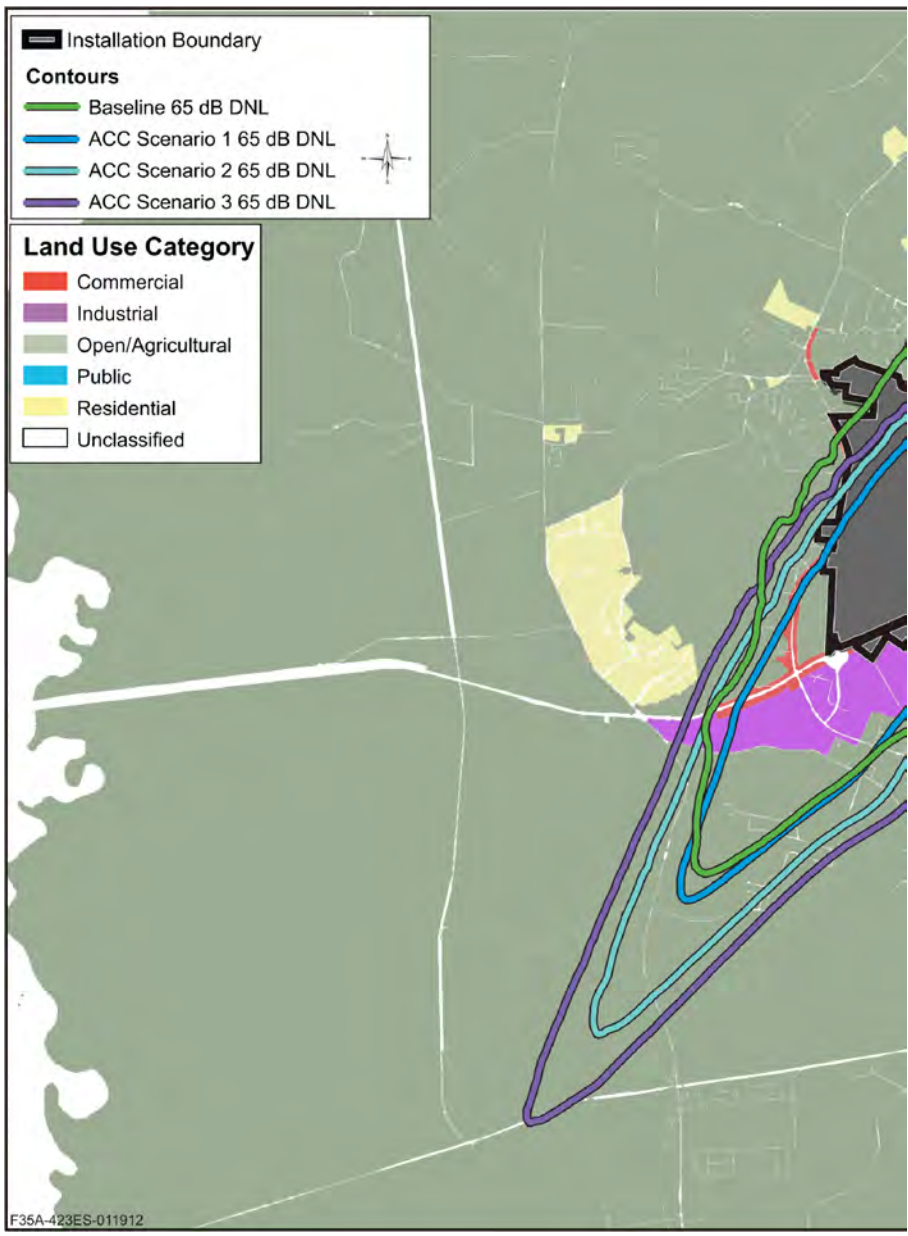


Figure 11-2. Shaw AFB Comparison of Baseline and Projected 65 dB DNL Noise Contours for All Scenarios

Under ACC Scenario 1, the overall area and residential land use subject to noise levels 65 to 80 dB DNL would decrease. Under ACC Scenarios 2 and 3, the overall area affected by noise levels of 65 dB DNL and greater would increase, but residential land use subject to noise levels 65 to 80 dB DNL would decrease (Table 11-5). No residential areas would be newly subject to noise above 65 dB DNL under any scenario.

Table 11-5. Change in Acres of Defined Residential Land Use Within the 65 dB DNL Noise Contour Bands at Shaw AFB

	Baseline (acres)	*Projected (acres)*	*Change (acres)*
ACC Scenario 1	352	51	-301
ACC Scenario 2	352	165	-187
ACC Scenario 3	352	337	-15

As Table 11-6 shows, that while the total acres affected by noise levels 65 dB DNL and greater would decrease under ACC Scenario 1, more acres would be affected under ACC Scenarios 2 and 3 when compared to baseline. However, the total population and number of households exposed to noise levels 65 dB DNL and greater would decrease under all three ACC Scenarios when compared to baseline conditions.

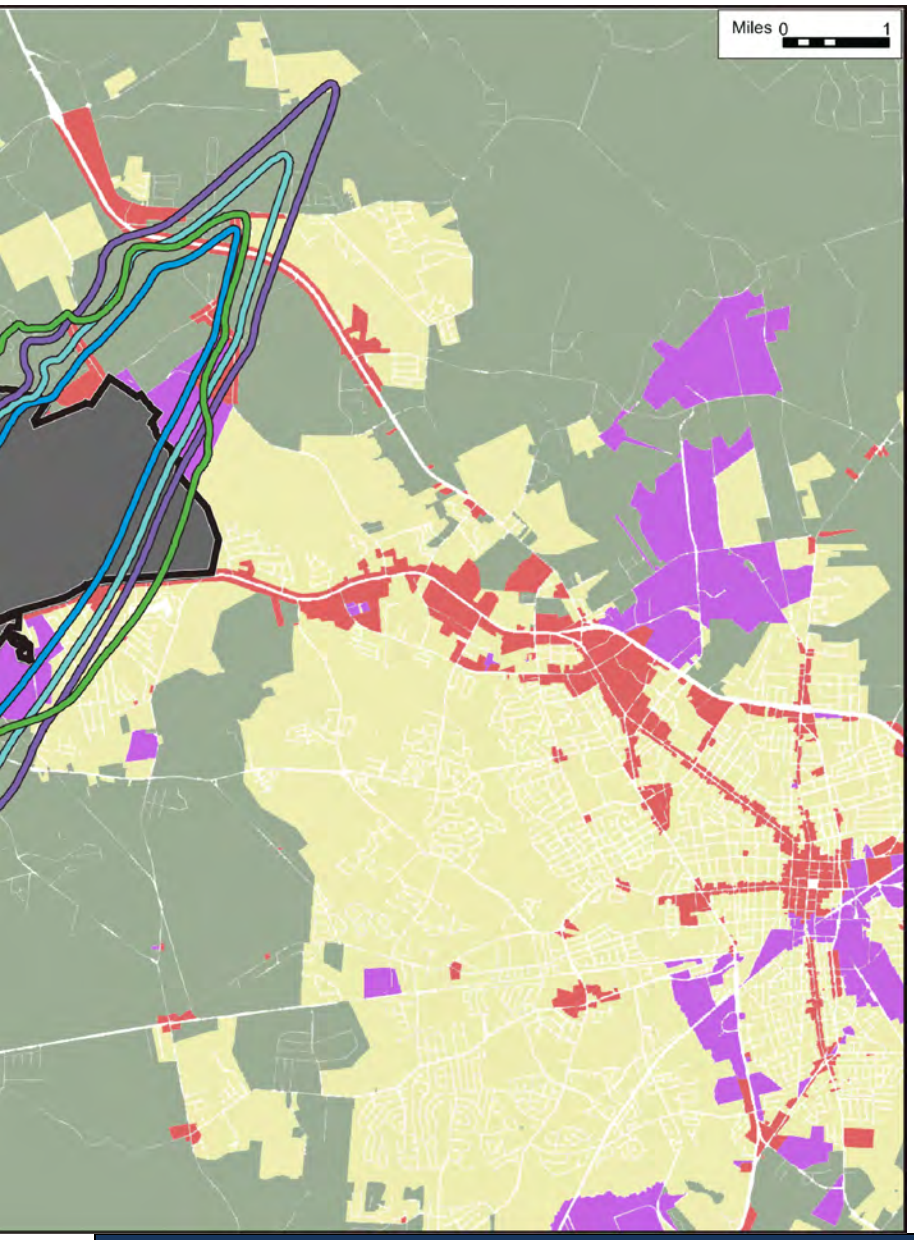


Table 11-6. Off-Base Noise Exposure under ACC Scenarios 1, 2, and 3 for Shaw AFB (Proposed/Baseline)

Contour Band (dB DNL)[1]	*Acreage*	*Population*	*Households*
ACC Scenario 1			
65 – 70	2,176/3,464	1,119/2,415	381/816
70 – 75	701/1,404	407/1,075	131/357
75 – 80	112/208	78/276	22/90
80 – 85	0/7	16/19	4/5
85+	0/0	0/0	0/0
Total	**2,989/5,083**	**1,620/3,785**	**538/1,268**
ACC Scenario 2			
65 – 70	3,909/3,464	1,732/2,415	584/816
70 – 75	1,389/1,404	801/1,075	273/357
75 – 80	362/208	209/276	63/90
80 – 85	31/7	41/19	11/5
85+	0/0	0/0	0/0
Total	**5,691/5,083**	**2,783/3,785**	**930/1,268**
ACC Scenario 3			
65 – 70	5,531/3,464	2,267/2,415	771/816
70 – 75	2,001/1,404	1,068/1,075	364/357
75 – 80	618/208	345/276	109/90
80 – 85	84/7	68/19	19/5
85+	0/0	13/0	3/0
Total	**8,234/5,083**	**3,761/3,785**	**1,266/1,268**

Note: [1]Exclusive of upper bound for all bands.

Noise effects also consider individual overflights. As presented in Table 11-7, the F-35A would generally be louder than the F-16s under most modes of flight (except re-entry and radar patterns) as measured by single overflight metrics (SEL and L_{max}).

Table 11-7. SEL and L_{max} Comparison for Shaw AFB

Condition	*Based F-16C*[1, 2]				*F-35A*[2, 3]			
	SEL (dBA)	*L_{max} (dBA)*	*Power (%NC)*	*Speed (kts)*	*SEL (dBA)*	*L_{max} (dBA)*	*Power (%ETR)*	*Speed (kts)*
Afterburner Assisted Take-off[4] (1,000 feet AGL)	**110**	**104**	104%	300	**118**	**115**	100%	300
Military Power Take-off (1,000 feet AGL)	**110**	**104**	104%	300	**118**	**115**	100%	300
Departure Holddown (6,000 MSL, 5,758 AGL)	**73**	**64**	90%	350-400	**85**	**77**	55%	300-400
Arrival (non-break, through 1,000 feet AGL, gear down)[5]	**88**	**82**	87%	180	**99**	**95**	40%	180
Overhead Break (downwind leg, 1,800 feet AGL, gear down)	**92**	**83**	92%	200	**94**	**88**	40%	200
Low Approach and Go (downwind leg, 1,800 feet AGL, gear down)	**92**	**83**	92%	200	**94**	**88**	40%	210
Re-entry Pattern (downwind leg, 1,300 feet AGL, gear up)	**90**	**83**	92%	300	**85**	**80**	30%	300
Radar Pattern (downwind leg, 1,300 feet AGL, gear up)	**94**	**85**	92%	250	**85**	**80**	30%	250

Shaw AFB nominal elevation = 242 feet MSL; Weather: 63°F, 67% Relative Humidity; SEL = Sound Exposure Level; L_{max} = Maximum (instantaneous) Sound Level; dBA = A-weighted decibel; NC = Engine core revolutions per minute; kts = knots; ETR = Engine thrust request. *Notes*: All numbers are rounded. [1]Modeled F-16C with F110-GE-100 engine. [2]F-16 Aircraft spend 90 percent of take-off in afterburner compared to 5 percent by the F-35. [3]Modeled with reference acoustic data for an F-35A. [4]Power reduced from afterburner to military power prior to reaching 1,000 feet AGL. [5]F-16C values reflect gear up condition.

Air Quality. Under Scenarios 1 and 2, emissions would decrease for all pollutant categories. In contrast, SO_x would increase negligibly in Scenario 3. No scenario would introduce emissions that would deteriorate regional air quality; the area would remain in attainment for all federal and state air quality standards. As an example, Table 11-8 presents the emissions from operations under ACC Scenario 3 which involves the largest number of aircraft and operations.

Table 11-8. Proposed Annual Operational Emissions under ACC Scenario 3 at Shaw AFB

Activity	*Pollutants in Tons per Year*						
	CO	*NO_x*	*VOCs*	*SO_x*[1]	*PM_{10}*	*$PM_{2.5}$*	*CO_2e*[2]
Aircraft	72.09	200.60	2.47	92.94	6.38	6.19	68,789
Engine Runups	1.44	0.24	0.04	0.36	0.01	0.01	249
AGE[2]	19.83	17.68	1.07	4.98	1.61	1.56	4,616
POVs	96.50	4.36	5.61	0.10	0.25	0.25	4,638
Total Annual ACC Scenario 3 Emissions	**189.85**	**222.88**	**9.18**	**98.38**	**8.26**	**8.01**	**78,292**
Baseline Annual Emissions	834.98	346.18	118.99	97.64	61.63	56.48	126,624
Net Change	***-645.13***	***-123.30***	***-109.81***	***0.73***	***-53.37***	***-48.47***	***-48,332***
Major Source Threshold	**250**	**250**	**250**	**250**	**250**	**250**	**-**

Notes:
[1]CO_2e = (CO_2 * 1) + (CH_4 * 21) + (N_2O * 310), (40 CFR 98, Subpart A, Table A-1) in metric tons per year.
[2]With the exception of SO_x (which the JSF program office has not determined as of this date) these data reflect F-35A specific AGE equipment.

Safety. Construction and modification would be consistent with established safety protocols and would not increase safety risks. The F-35A is a new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational and as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone extensive testing prior to the time the beddown would occur. In addition, the F-35A engine is the product of 30 years of engineering, lessons learned from previous single-engine aircraft, and an extensive, rigorous testing program. Overall, the risks of a mishap are not expected to increase substantially.

Biological Resources. Under ACC Scenarios 1, 2, and 3, construction would produce 5.48 acres of surface disturbance. This construction would not impact plants, wildlife, wetlands, or special status species. Noise from aircraft operations would increase under ACC Scenarios 2 and 3, but the wildlife in the area of Shaw AFB have become habituated to it. As such, no impacts to wildlife or threatened and endangered species would occur. Decreased airfield operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. Similarly, more time spent at higher altitudes by the F-35As would reduce potential strikes in altitude zones where birds mostly fly.

Cultural and Traditional Resources. There would be no impacts to National Register-eligible or potentially eligible archaeological, architectural, or traditional cultural properties. In October 24, 2012, Section 106 of the National Historic Preservation Act (NHPA) consultation was re-initiated by the Air Force and letters sent to the South Carolina and Georgia SHPOs notifying them that no response had been received from earlier correspondence. The South Carolina SHPO responded requesting definition of the APE and identification of any historic properties that might be impacted (see the EIS, section SH3.9.1 for revisions made to address these comments). As of publication of this document, no further correspondence was received from the Georgia SHPO. Project-specific government-to-government consultation was initiated in 2010 when letters were sent to the two federally-recognized American Indian Tribes that potentially have interest in the proposal. No responses were received, nor were any received after the Tribes received copies of the Draft EIS in the Spring of 2012. Another letter was sent

in October 2012, to both the Catawba Indian Nation and the East Band of Cherokee Indians, asking for a negative response; however, no responses have been received to date.

Socioeconomics. ACC Scenario 1 would reduce military and BOS personnel associated with Shaw AFB by 1,320 and decrease military payrolls by $50 million. ACC Scenario 2 would reduce personnel by 735 and payroll by $27 million; ACC Scenario 3 by 150 people and $4 million. All scenarios would expend an estimated $22 million for the proposed projects. However, the scenario would not impact regional employment, income, or regional housing market. The Shaw AFB area would likely provide the skilled workers for the temporary construction jobs.

Environmental Justice. Table 11-9 displays the total population, total minority population, percentage minority, total low-income population, and percent low-income for the areas in the vicinity of Shaw AFB affected by noise greater than or equal to 65 dB DNL. As the data demonstrate, the percentage of minority populations affected under baseline conditions already greatly exceeds the state average of 33 percent. This existing issue would be exacerbated under ACC Scenarios 1, 2, and 3. Baseline low-income populations account for 20 percent of the affected population, or 5.7 percent above the state average. All scenarios would add to this existing problem.

Table 11-9. Minority and Low-Income Populations Affected by 65 dB DNL and greater Noise Contour Bands at Shaw AFB

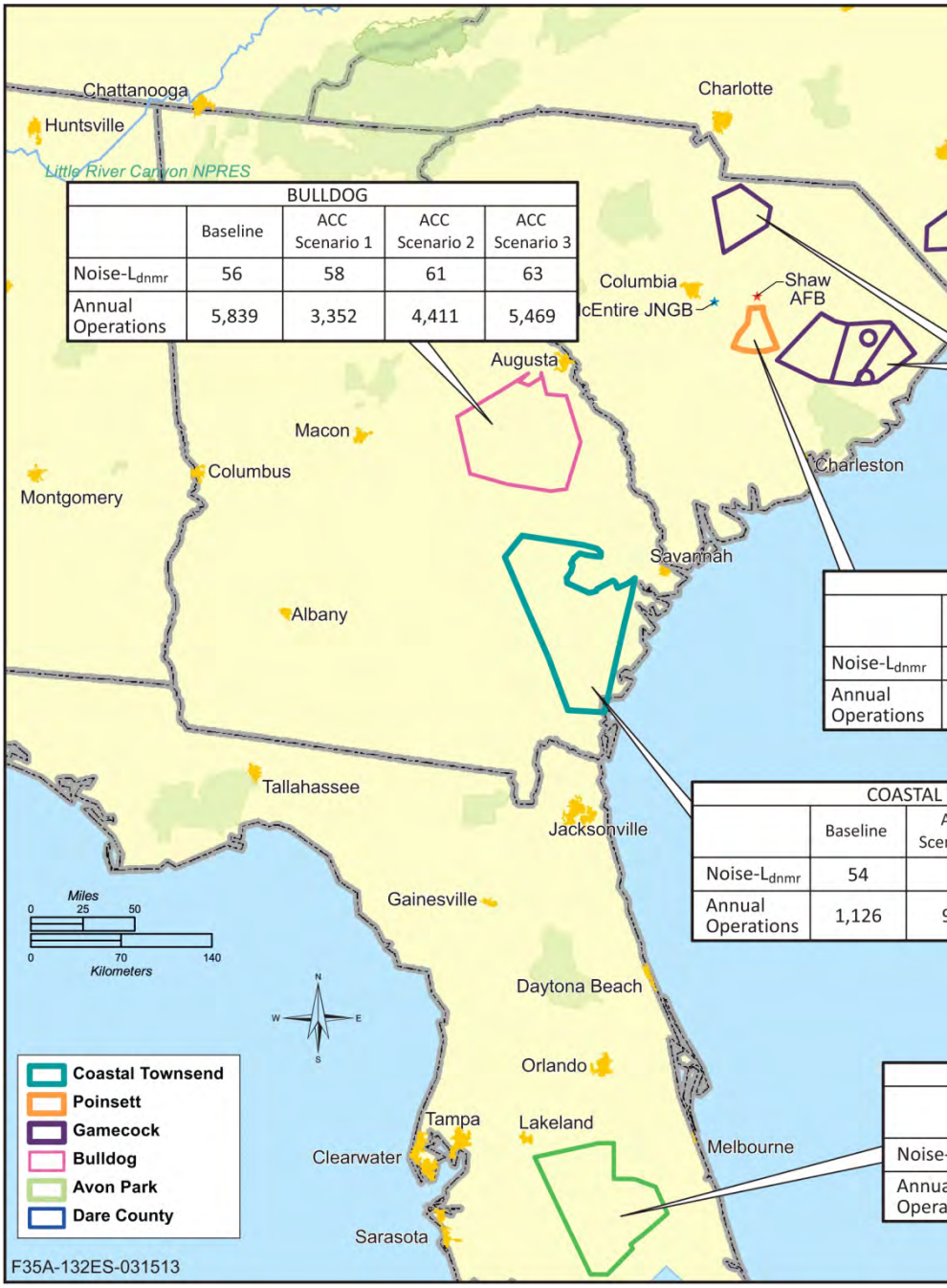
	Total Population	*Minority Population*	*Percent Minority*	*Low-Income Population*	*Percent Low-Income*
Baseline	2,299	1,078	48	447	20
ACC Scenario 1	1,050	506	48	218	20
ACC Scenario 2	1,808	869	48	367	20
ACC Scenario 3	2,436	1,177	48	489	20

Ground Traffic and Transportation. Despite a negligible, short-term increase in construction traffic, no effects on the Level of Service (LOS) for any portion of the roadway network would be expected. Under all scenarios, traffic would decrease. Baseline personnel levels would decrease under all scenarios and would not affect any LOS thresholds.

Other Resources. The EIS analyzed the potential environmental consequences of implementing ACC Scenario 1, 2, and 3 on three other resources: geology, soils, and water (SH3.5 in the EIS); community facilities and public services (SH3.13); and hazardous materials and waste (SH3.15). No aspect of the beddown scenarios would result in impacts to these resources.

Airspace and Range Use. Figure 11-3 depicts the main overland airspace and range units proposed for use by the F-35As. Data presented in the figure include total annual operations for all aircraft under baseline, ACC Scenario 1, ACC Scenario 2, and ACC Scenario 3. Such operations would fall below baseline levels in ACC Scenario 1, but would increase under ACC Scenarios 2 and 3. The F-35As would also fly more time at higher altitudes than the F-16s, operating 80 percent of the time above 23,000 feet mean sea level (MSL) in comparison to 10 to 30 percent by the F-16s.

The F-35As from Shaw AFB would primarily use the existing Bulldog, Gamecock, Poinsett, and Coastal Townsend airspace units. Dare County and Avon Park would receive limited use. In all airspace units, operations per flying day would decrease and low-altitude overflights would be reduced.



BULLDOG

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	56	58	61	63
Annual Operations	5,839	3,352	4,411	5,469

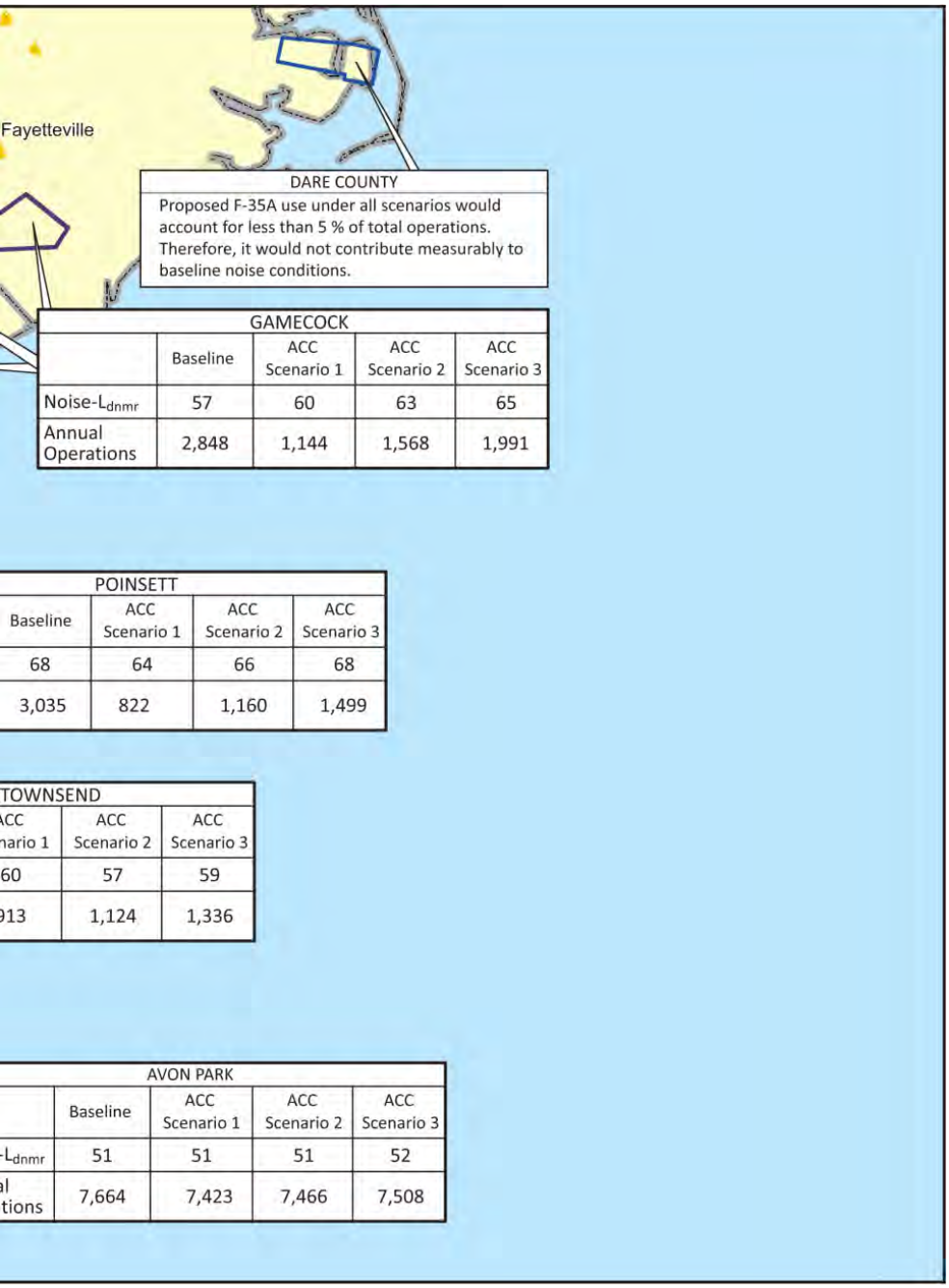
COASTAL

	Baseline
Noise-L_{dnmr}	54
Annual Operations	1,126

Figure 11-3. Baseline and Proposed Operations and Noise Environment for Airspace Used by Shaw AFB

F-35As from Shaw AFB would also fly in overwater Warning Areas, although to a lesser degree than current use. Required supersonic operations would be conducted only in these Warning Areas, at least 15 nautical miles offshore or above 30,000 feet MSL.

Noise represents the primary effect of F-35A operations in the airspace units and over the ranges. For Bulldog, Coastal Townsend, and Gamecock, subsonic noise levels would increase perceptibly (i.e., 6 to 8 dB) under ACC Scenario 3. None would exceed 65 dB L_{dnmr}, but Gamecock would be subject to 65 dB L_{dnmr} under Scenario 3. Although the Poinsett airspace and associated range would continue to experience noise levels of 68 dB L_{dnmr}, no change from baseline noise levels would occur under any scenario.



GAMECOCK

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
Noise-L_{dnmr}	57	60	63	65
Annual Operations	2,848	1,144	1,568	1,991

POINSETT

Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
68	64	66	68
3,035	822	1,160	1,499

TOWNSEND

ACC nario 1	ACC Scenario 2	ACC Scenario 3
60	57	59
913	1,124	1,336

AVON PARK

	Baseline	ACC Scenario 1	ACC Scenario 2	ACC Scenario 3
L_{dnmr}	51	51	51	52
tions	7,664	7,423	7,466	7,508

Due to the generally high altitudes for F-35A operations, the large size of the airspace units, and the dispersed nature of overflights, operations by the F-35A would not substantially affect land use status, management, or recreation under the airspace units. For similar reasons, no impacts to cultural or natural resources are expected.

In areas under Bulldog, Coastal Townsend, and Gamecock airspace, persons on the ground could perceive an increase in noise if ACC Scenario 3 were implemented. Such increases would likely add to the percentage of the population annoyed by aircraft noise. Several communities underlie this airspace, including Hinesville with a population of more than 30,000. Persons recreating in special land use areas, such as state parks, may consider additional noise especially intrusive. The F-35As would continue to adhere to Federal Aviation Administration regulations for avoidance of communities and structures.

Air quality under the airspace is generally good and without numerous large stationary sources. F-35A operations would not contribute to any deterioration of air quality since more than 95 percent of the time they would fly above 3,000 feet AGL, the mixing height for emissions.

Disproportionate impacts to minority and low-income populations would occur in Scenario 3 under the Gamecock airspace. Noise would increase to 65 dB L_{dnmr} in that location.

No changes to airspace structure or management would occur with beddown of the F-35As. Use of these long-established airspace units and continued adherence to procedures and regulations would assure safe and efficient use. No conflicts or increased safety risks would be anticipated.

12.0 CUMULATIVE EFFECTS

Cumulative effects can result from the interaction of the proposed action with past, present, and reasonably foreseeable future actions. The goal of this analysis is to determine if such interactions produce greater impacts than would result from the proposed action (i.e., F-35A beddown) alone. For each alternative location, an effort has been made to identify actions that overlap in time and/or location with the beddown. In all cases, the effects of past actions, including aircraft operations, have been incorporated into the analysis of baseline conditions. On-going and future actions that have a potential to interact with the proposed action are included in this cumulative analysis. Assessment of these cumulative effects enables decision-makers to have the most current information available so that they can evaluate the environmental consequences of the beddown of the F-35A aircraft.

All of the six alternative locations consist of active, dynamic military installations. At each, numerous on-going and planned construction and infrastructure projects could occur during the same time period as slated for F-35A construction. These projects range from small renovations to road realignments to major facility construction. In all cases, the analysis demonstrated that none of these on-installation actions would be expected to result in more than negligible impacts individually or cumulatively. All the actions affect very specific, circumscribed areas geographically separated from F-35A renovations, and the magnitude of the actions is minimal. Short duration, temporary increases in localized noise, air emissions, and traffic would occur, but the combined effects would remain well below any standards or regulatory thresholds. For this reason, the following discussion focuses on the potential cumulative effects of actions affecting the airspace associated with each alternative location. McEntire JNGB and Shaw AFB are discussed together since the same cumulative actions apply to both.

12.1 BURLINGTON AGS

Two ongoing projects apply to the airspace—the Condor MOA expansion proposal and construction of wind turbines. The wind turbine projects would not affect airspace management or use in the Condor MOA. Changes to the Condor MOA would also have little cumulative effect when considered with the F-35A beddown at Burlington AGS. Under this proposal, Condor 1 and 2 MOAs would be combined and the floor of the MOA would be lowered. Because Burlington AGS has committed to maintain operations in the Condor MOAs at their current floor and ceiling extents, and due to the fact that -35As would fly mostly at altitudes above 23,000 feet MSL, noise levels from the actions would be less than 45 dB $L_{dnmr.}$

12.2 HILL AFB

No cumulative airspace actions would apply to Hill AFB at this time.

12.3 JACKSONVILLE AGS

No cumulative airspace actions would apply to Jacksonville AGS at this time.

12.4 McENTIRE JNGB AND SHAW AFB

Because McEntire JNGB and Shaw AFB are within close proximity to one another, they use similar airspace. Basing the F-35A at both locations could alter use of the airspace. It is possible that under the F-35A basing, McEntire JNGB and Shaw AFB could receive up to 72 F-35A aircraft. Combined operations from both installations would affect airspace both installations currently use (Poinsett, Bulldog, Coastal Townsend, and Gamecock), resulting in cumulative noise levels from 64 dB L_{dnmr} in Bulldog to 71 dB L_{dnmr} in Poinsett. These

cumulative noise levels would represent substantial and perceptible increase of 3 to 9 dB. While no land status would change and few communities would be affected (most of Poinsett is a training range with no communities), these increases in noise would generate notably higher degrees of annoyance among underlying populations. Minorities and low-income populations would not be disproportionately affected by noise in the areas under Poinsett or Coastal Townsend. Since small, dispersed minority and low-income populations with proportions above the state average exist under Gamecock and noise levels would increase 9 dB to 66 L_{dnmr}, the potential exists for disproportionate impacts to minority and low-income populations under the Gamecock airspace.

12.5 MOUNTAIN HOME AFB

Mountain Home AFB is an active military installation that undergoes continual changes in mission and in training requirements. A series of aircraft beddown and other decision over the past decade created the current operational and environmental conditions for Mountain Home AFB and its associated training airspace. In addition, a total of 34 proposed construction projects independent of the F-35A beddown are ongoing or planned (such as the USAF-led Royal Saudi Air Force (RSAF) F-15SA basing) at Mountain Home AFB. Other on-going maintenance and repair activities are also likely to occur at the base during this period. None of these actions would be expected to result in more than negligible impacts individually or cumulatively since they affect very specific, circumscribed areas geographically separated from F-35A renovations. Short duration, temporary increases in localized noise, air emissions, and traffic would occur, but the combined effects would remain well below any standards or regulatory thresholds.

One reasonably foreseeable action, Air Education and Training Command's (AETC) F-35A Training proposal, could cumulatively interact with the proposed action if the Boise Air Terminal were selected for beddown of up to 72 F-35A aircraft. Under the AETC proposal, the F-35As from the Idaho ANG could conduct up to 21,272 annual operations at Mountain Home AFB, particularly pattern work and low approaches and departures. Combined with any ACC scenario under the proposed action, these activities would substantially increase operations at the base. When combined with ACC Scenario 3 (32,001 airfield operations), operations at the airfield would increase by 53,273 operations or 163 percent over the no action. Addition of this many operations would expand the area affected by 65 dB DNL and greater by 4,842 acres. While such an expansion would occur, the zoning around the base has precluded residential development and establishment of schools and hospitals, thereby limiting the potential for additive effects from the airfield noise.

In the airspace, the maximum combined subsonic noise levels in the Jarbidge and Owyhee airspace would be 67 and 68 L_{dnmr}, respectively. All other noise levels would be much less than 65 L_{dnmr} (from 45 to 53 L_{dnmr}). The noise increase of 3 to 4 dB would be perceptible under Jarbidge North and Owyhee North, as would the 9 dB increase under the Saddle MOA. However, few people would be affected by the increase in noise as population is low in these areas. Increase in noise would not affect the Duck Valley Indian Reservation under the Owyhee North MOA as aircraft do not fly within 5 miles of Owyhee, NV and per the 1996 settlement agreement, Mountain Home AFB agreed to fly no lower than 15,000 feet AGL over the reservation barring national security contingencies. Cumulative supersonic noise levels from the use of the airspace would increase 5 dB CDNL over baseline in the Owyhee North airspace and 3 to 4 dB CDNL in Jarbidge North. Sonic booms would increase, on average, by 59 booms per month, or about 134 percent over no action. In Owyhee North, sonic booms would, on average, increase by 55 per

month or about 130 percent over no action. These changes in the number of booms would be perceptible and likely cause annoyance in people underlying the airspace. No supersonic operations are permitted over the Duck Valley Indian Reservation at any time; therefore, there would be no increase in sonic booms with both proposals.

If both the F-35A operational beddown and the RSAF basing actions were to occur, there would be substantial increases in the number of aircraft based at Mountain Home AFB, in airfield and airspace operations, and in personnel and construction. Issues related to adequate ramp space for aircraft and security along the flightline could occur if both actions were to take place. Maintenance of aircraft and disposal of hazardous materials and waste would occur in accordance with existing plans and procedures; therefore there would be no impacts due to an increase in aircraft at the base. Construction for both actions would occur in previously disturbed areas and no adverse impacts would occur to soils, water, hazardous waste management, biological or cultural resources. Neither action separately or together would negatively impact on-base or off-base housing, or community and infrastructure.

For subsonic noise, the maximum combined noise levels in the Jarbidge North and Owyhee North airspace would be 68 L_{dnmr}. All other noise levels would be less than 65 L_{dnmr} (from 46 to 48 L_{dnmr}). Supersonic noise levels in in Jarbidge North and Owyhee North would increase by 4 to 5 dB. In Jarbidge North under ACC Scenario 3 combined with the RSAF proposal, sonic booms would increase, on average, by 40 booms per month, or about 91 percent over no action. In Owyhee North, booms would, on average, increase by 39 per month or about 87 percent over no action. As with subsonic noise, the increase would be perceptible, however, few people would be affected. No change would occur to noise on the Duck Valley Indian Reservation or disproportionally affect other minority or low-income populations.

With the addition of all three actions--operational F-35As at Mountain Home AFB (up to 72 aircraft), training F-35A aircraft from the Boise AGS (72 aircraft), and 18 RSAF F-15SA aircraft, total training operations by the Air Force would increase by approximately 42,000 (increasing 126 percent compared to the no action). The maximum combined subsonic noise levels in Jarbidge North and Owyhee North would be 69 dB L_{dnmr} and 68 dB L_{dnmr}, respectively. Cumulative noise levels from supersonic activity in the airspace would increase by 4 dB CDNL in Owyhee North and by 5 dB CDNL in Jarbidge North. Sonic booms per day would increase by 167 percent beneath Owyhee North MOA (approximately 3 per day) and by 180 percent (3.6 per day) in Jarbidge North. These changes in the number of booms would be perceptible and likely cause annoyance in people underlying the airspace. No supersonic operations are permitted over the Duck Valley Indian Reservation at any time; therefore, there would be no increase in sonic booms or supersonic noise. Overall, these changes in the noise levels would be perceptible. Coordination with affected communities and jurisdictions on potential avoidance procedures could provide some reduction in impacts for selected locations but would not tend to reduce noise to quiet levels. Capacity of various MOAs to support combined operations safely may require further consideration. Higher levels of activity could add to the workload of air traffic controllers and generate a need for additional airspace management personnel. Therefore, cumulative impacts from all actions would be adverse but would not exceed significance thresholds for safety, land use, environmental justice or biological or cultural resources.

13.0 COMPARISON OF ENVIRONMENTAL CONSEQUENCES BY ALTERNATIVE AND SCENARIO

This section presents a comparative analysis of the alternative locations and aircraft beddown scenarios presented in the Revised Draft EIS. The decisions to be made associated with the EIS are:

- Where to base operational F-35A aircraft.
- How many aircraft to be beddown at the selected alternative location or locations.
- What actions could be implemented to avoid or reduce, to the extent practicable, significant environmental impacts?

In addition to these decisions regarding the F-35A operational aircraft, the on-going dynamics of an active military base occur at each alternative location. The most noticeable of these activities will be the retirement and/or reassignment of F-16 and F-15 aircraft.

NEPA requires focused analyses on the areas and resources, such as wildlife or socioeconomics which are potentially affected by the proposed action or an alternative. Because the F-35A is a new aircraft that is under development, some data normally used to predict noise, air quality, and safety conditions cannot be obtained at this time. The data used in this Revised Draft EIS represent the most up-to-date information on the aircraft components, engine, flight characteristics, training airspace, and other requirements. For the beddown alternatives and scenarios identified for this proposed action, such summaries and comparisons are presented in Table 13-1. Comparing and differentiating among alternatives comprise a fundamental premise of the NEPA process.

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Table 13-1. Comparative Summary of Environmental Consequences

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.1**	**HL3.1**	**JX3.1**	**Mc3.1**	**MH3.1**	**SH3.1**
Airspace Management and Use	**Base** • No adverse impacts to airspace management and use within the local air traffic environment. • 2.3 percent decrease in total annual airfield operations under Scenario 1 and 0.7 percent decrease under Scenario 2. **Airspace:** • No change to current configuration of airspace under either scenario. • 7 percent decrease in total operations under Scenario 1 and 19 percent increase under Scenario 2. • No adverse impacts on airspace use and management.	**Base** • No adverse impacts to airspace management and use within the local air traffic environment. • 50 percent decrease in total annual airfield operations under Scenario 1; 27.2 percent decrease under Scenario 2; and 4.4 percent decrease under Scenario 3. **Airspace:** • No change to current configuration of airspace under any scenarios. • 61 percent decrease in total operations under Scenario 1; 37 percent decrease under Scenario 2; and 13 percent decrease for Scenario 3. • No adverse impacts on airspace use and management.	**Base:** • No adverse impacts to airspace management and use within the local air traffic environment. • 1.4 percent decrease in total annual operations under Scenario 1 and 0.06 percent increase under Scenario 2. **Airspace:** • No change to current configuration of airspace under any scenarios. • 4 percent increase in total operations under Scenario 1 and 10 percent increase under Scenario 2. • No adverse impacts on airspace use and management.	**Base:** • No adverse impacts to airspace management and use within the local air traffic environment. • 21 percent decrease in total annual airfield operations under Scenario 1 and 15.2 percent decrease under Scenario 2. **Airspace:** • No change to current configuration of airspace under any scenarios. • 7 percent decrease in total operations under Scenario 1 and 6 percent decrease under Scenario 2. • No adverse impacts on airspace use and management.	**Base:** • No adverse impacts to airspace management and use within the local air traffic environment. • 32.7 percent increase in total annual airfield operations under Scenario 1; 65.4 percent increase under Scenario 2; and 98.1 percent increase under Scenario 3. **Airspace:** • No change to current configuration of airspace under any scenarios. • 13 percent increase in total operations under Scenario 1; 26 percent increase under Scenario 2; and 39 percent increase under Scenario 3. • No adverse impacts on airspace use and management.	**Base:** • No adverse impacts to airspace management and use within the local air traffic environment. • 70.9 percent decrease in total annual airfield operations under Scenario 1; 48.9 percent decrease under Scenario 2; and 27.1 percent decrease under Scenario 3. **Airspace:** • No change to current configuration of airspace under any scenarios. • 30 percent decrease in total operations under Scenario 1; 21 percent increase under Scenario 2; and 12 percent decrease under Scenario 3. • No adverse impacts on airspace use and management.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.2**	**HL3.2**	**JX3.2**	**Mc3.2**	**MH3.2**	**SH3.2**
Noise	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: +289 Population: +2,061 Households: +997 Representative Receptors: +5 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: +672 Population: +3,117 Households: +1,444 Representative Receptors: +6 **Airspace:** • **Subsonic:** Perceptible increase in 2 airspace units. • **Supersonic:** Supersonic events would not affect populations, communities, special land uses, or other resources.	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: -1,166 Population: -3,765 Households: -1,380 Representative Receptors: -9 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: -491 Population: -1,247 Households: -465 Representative Receptors: -2 • ***Scenario 3***: **Affected by 65 dB DNL or greater:** Acres: +183 Population: +1,326 Households: +466 Representative Receptors: No change **Airspace:** • **Subsonic:** Perceptible increase in 3 airspace units. • **Supersonic:** Sonic booms per month decrease by 194, 161, and 141 in Scenarios 1, 2, and 3, respectively.	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: -1,512 Population: -138 Households: -43 Representative Receptors: -2 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: -1,057 Population: -98 Households: -31 Representative Receptors: -2 **Airspace:** • **Subsonic:** Perceptible increase in 1 airspace unit. • **Supersonic:** Supersonic events would not affect populations, communities, special land uses, or other resources.	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: -2,728 Population: -468 Households: -176 Representative Receptors: -6 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: -2,229 Population: -392 Households: -147 Representative Receptors: -4 **Airspace:** • **Subsonic:** Perceptible increase in 1 airspace unit. • **Supersonic:** Supersonic events would not affect populations, communities, special land uses, or other resources.	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: +1,005 Population: 0 Households: 0 Representative Receptors: +1 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: +2,086 Population: 0 Households: 0 Representative Receptors: +1 • ***Scenario 3***: **Affected by 65 dB DNL or greater:** Acres: +3,455 Population: 0 Households: 0 Representative Receptors: +1 **Airspace:** • **Subsonic:** No perceptible increases in airspace units. • **Supersonic:** Sonic booms per month increase by 9, 15, and 22 for Owyhee North under Scenarios 1, 2, and 3. Sonic booms increase by 7, 13, and 22 for Jarbidge North in Scenarios 1, 2, and 3, respectively.	**Base:** • ***Scenario 1***: **Affected by 65 dB DNL or greater:** Acres: -2,097 Population: -2,165 Households: -730 Representative Receptors: -9 • ***Scenario 2***: **Affected by 65 dB DNL or greater:** Acres: +608 Population: -1,002 Households: -338 Representative Receptors: -3 • ***Scenario 3***: **Affected by 65 dB DNL or greater:** Acres: +3,151 Population: -24 Households: -2 Representative Receptors: +3 **Airspace:** • **Subsonic:** Perceptible increase in 3 airspace units. • **Supersonic:** Supersonic events would not affect populations, communities, special land uses, or other resources.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.3**	**HL3.3**	**JX3.3**	**Mc3.3**	**MH3.3**	**SH3.3**
Air Quality	**Base:** • Under both scenarios, emissions would not be introduced that would exceed threshold levels or would substantially deteriorate regional air quality. • Area is in attainment for all criteria pollutants; no conformity determination required. • Regional emissions of CO_2e would incrementally decrease under Scenario 1 and increase under Scenario 2. **Airspace:** • Under both scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.	**Base:** • For all scenarios, emissions would not reach or exceed established *de minimis* thresholds for criteria pollutants currently in nonattainment or maintenance; therefore, no conformity determination required. • Regional emissions of CO_2e with construction and operations activities from all three scenarios would decrease. **Airspace:** • Under all scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.	**Base:** • Under Scenarios 1 and 2, emissions would decrease when compared to baseline conditions. Scenarios 1 and 2 would not introduce emissions that would substantially deteriorate regional air quality. • Area is in attainment for all criteria pollutants; no conformity determination required. • Regional emissions of CO_2e with construction and operations activities from all three scenarios would decrease. **Airspace:** • Under both scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.	**Base:** • Under both scenarios, emissions would decrease and would not introduce emissions that would exceed threshold levels or would substantially deteriorate regional air quality. • Area is in attainment for all criteria pollutants; no conformity determination required. • Regional emissions CO_2e would incrementally decrease under both scenarios. **Airspace:** • Under both scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.	**Base:** • Under all scenarios, emissions would increase when compared to baseline conditions; however, these emissions would not exceed threshold levels and would not degrade regional air quality. • Area is in attainment for all criteria pollutants; no conformity determination required. • Regional emissions of CO_2e would incrementally increase under all scenarios. **Airspace:** • Under all scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.	**Base:** • Under Scenarios 1 and 2, emissions would decrease when compared to baseline conditions. • For Scenario 3, all emissions except for SO_x would decrease; however, these emissions would not exceed threshold levels and would not degrade regional air quality. • Area is in attainment for all criteria pollutants; no conformity determination required. • Regional emissions of CO_2 and other GHGs would incrementally decrease under all scenarios. **Airspace:** • Under all scenarios, emissions within the training airspace would be negligible because over 95 percent of the operations would occur well above the mixing height.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.4**	**HL3.4**	**JX3.4**	**Mc3.4**	**MH3.4**	**SH3.4**
Safety	**Base:** • Total annual airfield operations for based fighter aircraft would decrease by 2.3 percent and 0.7 percent under Scenarios 1 and 2, respectively, with commensurate decrease in mishap potential. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • No increase in flare use. • Probability of flare debris strike negligible (0.0021/year). • Potential decrease of bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.	**Base:** • Total annual airfield operations for based fighter aircraft would decrease by 50.1, 27.2, and 4.4 percent under Scenarios 1, 2, and 3, respectively, with commensurate decrease in mishap potential. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • No increase in flare use. • Probability of flare debris strike negligible (0.00044/year). • Potential decrease of bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.	**Base:** • Total annual airfield operations for based fighter aircraft would decrease by 1.4 percent under Scenario 1 and increase 0.06 percent for Scenario 2, with relatively no change. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • No increase in flare use. • Probability of flare debris strike is zero. • No anticipated changes to bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.	**Base:** • Total annual airfield operations for based fighter aircraft would decrease by 21.0 and 15.2 percent under Scenarios 1 and 2, respectively, with commensurate decrease in mishap potential. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • No increase in flare use. • Probability of flare debris strike negligible (0.0011/year). • Potential decrease of bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.	**Base:** • Total airfield operations would increase by 32.7, 65.4, and 98.1 percent under Scenarios 1, 2, and 3, respectively, with a commensurate increase in the safety risk to aircrews and personnel due to the increased accident and mishap potential. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • Because no replacement of aircraft, minor increase in use of flares with additional aircraft. • Probability of flare debris strike negligible (0.00035/year). • Potential increase to bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.	**Base:** • Total annual airfield operations for based fighter aircraft would decrease by 70.9, 48.9, and 27.1 percent under Scenarios 1, 2, and 3, respectively, with commensurate decrease in mishap potential. **Airspace:** • All current fire risk management procedures would remain unaffected due to the F-35A basing. • No increase in flare use. • Probability of flare debris strike negligible (0.0016/year). • Potential decrease of bird/wildlife-aircraft strike hazards and aircraft mishaps below baseline levels.

Table 13-1. Comparative Summary of Environmental Consequences (con't)						
	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.5**	**HL3.5**	**JX3.5**	**Mc3.5**	**MH3.5**	**SH3.5**
Geology, Soils, and Water	**Base:** • Under Scenarios 1 and 2, there would be negligible surface disturbance and no increase in impervious surfaces. • For all scenarios, construction would take place internally within existing facilities and geology, topography, soils, surface water, groundwater, and floodplains would not be adversely impacted. **Airspace:** • Not Applicable.	**Base:** • Scenario 1: total surface disturbance – 3.50 acres, total new impervious surfaces – 0.3 acres; Scenario 2: total surface disturbance – 4.27 acres, total new impervious surfaces – 0.5 acres; Scenario 3: total surface disturbance – 5.25 acres, total new impervious surfaces – 0.68 acres. • Construction would occur on areas of the base that have been previously disturbed. • No adverse impacts to geology, topography, soils, surface water, groundwater, and floodplains. **Airspace:** • Not Applicable.	**Base:** • Under Scenarios 1 and 2, there would be negligible surface disturbance and no increase in impervious surfaces. • Stormwater impacts to surface water would be minimized with best management practices. • No adverse impacts to geology, topography, soils, surface water, groundwater, and floodplains. **Airspace:** • Not Applicable.	**Base:** • Under both scenarios 0.76 acres would be disturbed and 0.06 acre of new impervious surface would be added. • Stormwater impacts to surface water would be minimized with best management practices. • No adverse impacts to geology, topography, soils, surface water, groundwater, and floodplains. **Airspace:** • Not Applicable.	**Base:** • Scenario 1: total surface disturbance – 3.17 acres, total new impervious surfaces – 0.83 acres; Scenario 2: total surface disturbance – 8.98 acres, total new impervious surfaces – 2.63 acres; Scenario 3: total surface disturbance – 11.39 acres, total new impervious surfaces – 2.81 acres • Stormwater impacts to surface water would be managed with best management practices. • No adverse impacts to geology, topography, soils, surface water, groundwater, and floodplains. **Airspace:** • Not Applicable.	**Base:** • Under all scenarios there would be 5.48 acres of surface disturbance and 2.61 acres of new impervious surfaces. • Stormwater impacts to surface water would be managed with best management practices. • No adverse impacts to geology, topography, soils, surface water, groundwater, and floodplains. **Airspace:** • Not Applicable.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.6**	**HL3.6**	**JX3.6**	**Mc3.6**	**MH3.6**	**SH3.6**
Terrestrial Communities	**Base:** • No loss of vegetation or terrestrial habitat under either scenario. • Decreased operations would result in a decreased opportunity for bird/wildlife-aircraft strikes to occur. **Airspace:** • Subsonic impacts to wildlife from changes in airspace operations would be minimal under both scenarios. • No supersonic operations below 30,000 feet MSL over land.	**Base:** • No impacts to terrestrial vegetation or wildlife from construction under all scenarios. • Decreased operations would result in a decreased opportunity for bird/wildlife- aircraft strikes to occur. **Airspace:** • Impacts to wildlife from changes in subsonic and supersonic operations would be minimal under all scenarios.	**Base:** • Impacts to vegetation would be minor. • Decreased operations would result in a decreased opportunity for bird/wildlife-aircraft strikes under Scenario 1 and could negligibly increase under Scenario 2. **Airspace:** • Subsonic impacts to wildlife would be minimal. • No supersonic operations below 30,000 feet MSL over land.	**Base:** • Impacts to vegetation would be minor. • Decreased operations would result in a decreased opportunity for bird/wildlife-aircraft strikes. **Airspace:** • Subsonic impacts to wildlife would be minimal. • No supersonic operations below 30,000 feet MSL over land.	**Base:** • No impacts to terrestrial vegetation. • Follow BASH plan to reduce possibility of bird/wildlife-aircraft strikes. **Airspace:** • Impacts to wildlife from changes in subsonic and supersonic operations would be minimal under all scenarios.	**Base:** • Impacts to vegetation would be minor. • Decreased operations would result in a decreased opportunity for bird/wildlife-aircraft strikes. **Airspace:** • Subsonic impacts to wildlife would be minimal. • No supersonic operations below 30,000 feet MSL over land.
Location in EIS:	**BR3.7**	**HL3.7**	**JX3.7**	**Mc3.7**	**MH3.7**	**SH3.7**
Wetlands/ Freshwater Aquatic Communities	**Base:** • No impacts to wetlands and other freshwater communities on the installation under all scenarios. **Airspace:** • Not applicable.	**Base:** • No wetlands have been identified on Hill AFB, and the few small ponds that occur are not located within the vicinity of the proposed project footprints under all scenarios. **Airspace:** • Not applicable.	**Base:** • No wetlands or freshwater aquatic communities occur within proposed construction areas under all scenarios. **Airspace:** • Not applicable.	**Base:** • No wetlands or freshwater aquatic communities occur within proposed construction areas under all scenarios. **Airspace:** • Not applicable.	**Base:** • No wetlands occur within any areas designated for proposed construction projects under all scenarios. **Airspace:** • Not applicable.	**Base:** • No wetlands or freshwater aquatic communities occur within proposed construction areas under all scenarios. **Airspace:** • Not applicable.

Table 13-1. Comparative Summary of Environmental Consequences (con't)						
	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.8**	**HL3.8**	**JX3.8**	**Mc3.8**	**MH3.8**	**SH3.8**
Threatened, Endangered, and Special Status Species/ Communities	**Base:** • No impacts to threatened and endangered species or special status communities due to construction activity. **Airspace:** • Under either scenario, impacts to listed threatened, endangered, or special status species would be minimal due to changes in airspace operations.	**Base:** • No federally listed species or special status species have been observed on base. **Airspace:** • Under any of the scenarios, impacts to the yellow-billed cuckoo and the greater sage-grouse would be minimal due to the proposed changes in subsonic and supersonic operations.	**Base:** • Location of construction would not occur within protected habitat or affect protected species. **Airspace:** • Under either scenario, impacts to listed threatened, endangered, or special status species would be minimal due to changes in airspace operations.	**Base:** • No federally listed species or special status species have been observed on base. **Airspace:** • Under either scenario, impacts to listed threatened, endangered, or special status species would be minimal due to changes in airspace operations.	**Base:** • No federally listed threatened or endangered species have been observed on base. • Noise from proposed construction and operations is not expected to affect the burrowing owl and long-billed curlew. **Airspace:** • Under any of the scenarios, impacts to the yellow-billed cuckoo, Columbia spotted frog, and the greater sage-grouse would be minimal due to changes in airspace operations.	**Base:** • Location of construction would not occur within protected habitat or affect protected species. **Airspace:** • Under any of the scenarios, impacts to listed threatened, endangered, or special status species would be minimal due to changes in airspace operations.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.9**	**HL3.9**	**JX3.9**	**Mc3.9**	**MH3.9**	**SH3.9**
Cultural and Traditional Resources	**Base:** • No impacts to archaeological, architectural, or traditional historic properties under either scenario. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government initiated in August 2012. Nine American Indian Tribes consulted, the St. Regis Band of Mohawk Indians replied that they had no concerns. No other responses received. **SHPOs** • No NRHP-eligible or potentially eligible effected; no effect in the APE. Maine, New Hampshire, and New York concur. • Vermont SHPO awaiting publication of next EIS.	**Base:** • No impacts to archaeological, architectural, or traditional historic properties under all scenarios. • Building 5 is eligible for listing on the NRHP; alterations and upgrades under Scenarios 2 and 3 would not affect the building's eligibility. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government consultation letters sent in August 2012. The Hopi Nation concurred with no effect determination. The Goshute requested further information. No other responses received as of publication of this version of the EIS. **SHPOs** • No NRHP-eligible or potentially eligible effected; no effect in the APE. • Concurrence of no effect within the APE was received from both the Utah and Nevada SHPOs in September 2012.	**Base:** • No impacts to archaeological, architectural, or traditional historic properties under either scenario. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government consultation letters sent in October 2012; no negative responses received as of publication of this version of the EIS. **SHPOs** • Florida SHPO concurred that there would be no effect to NRHP-eligible or potentially eligible properties in the APE.	**Base:** • No impacts to archaeological or traditional historic properties under either scenario. • Building 243 was not evaluated for NRHP-eligibility but proposed electrical upgrades would not likely effect the building's NHPA eligibility. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government consultation letters sent in October 2012; no negative responses received as of publication of this version of the EIS. **SHPOs** • Section 106 consultation letters were sent in October 24 to the South Carolina (SC) and Georgia SHPOs. The SC SHPO indicated the wish for more information. This request has been integrated into this version of the EIS. No further response from the Georgia SHPO was received.	**Base:** • No impacts to archaeological, architectural, or traditional historic properties under all scenarios in the APE. • Under Scenarios 2 and 3, Building 211 and four hangars are eligible for listing on the NRHP; alterations and upgrades would not alter the characteristics that make them NRHP-eligible. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government consultation letters sent in October 2012; no responses received as of publication of this version of the EIS. **SHPOs** • In October 2012, the Idaho and Oregon SHPOs were sent Section 106 consultation letters requesting concurrence of no effect. The Oregon SHPO responded with no further comments. As of publication of this version of the EIS, no further response was received from the Idaho SHPO.	**Base:** • No impacts to archaeological, architectural, or traditional historic properties under all scenarios in the APE. **Airspace:** • No adverse impacts in the APE would result to NRHP-eligible or potentially eligible properties. **Consultations:** **American Indian** • Government-to-government consultation letters sent in October 2012; no negative responses received as of publication of this version of the EIS. **SHPOs** • Section 106 consultation letters were sent in October 24 to the SC and Georgia SHPOs. The SC SHPO indicated the wish for more information. This request has been integrated into this version of the EIS. No further response from the Georgia SHPO was received.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.10**	**HL3.10**	**JX3.10**	**Mc3.10**	**MH3.10**	**SH3.10**
Land Use	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Increase 14 percent Residential: Increase 52 percent *Scenario 2* Overall: Increase 34 percent Residential: Increase 80 percent **Airspace:** • No change to general land use patterns, land ownership. No change to management of lands or special use land areas beneath the airspace. • No impairment to special use land management areas such as national/state parks and forests, national/ state wildlife refuges, historic trails, or wilderness areas. • No impact to community land uses.	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Decrease 50 percent Residential: Decrease 56 percent *Scenario 2* Overall: Decrease 21 percent Residential: Decrease 24 percent *Scenario 3* Overall: Increase 8 percent Residential: Increase 7 percent **Airspace:** • No change to general land use patterns, land ownership. No change to management of lands or special use land areas beneath the airspace. • No impairment to special use land management areas such as national/state parks and forests, national/ state wildlife refuges, historic trails, or wilderness areas. • No impact to community land uses.	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Decrease 47 percent Residential: Decrease 92 percent *Scenario 2* Overall: Decrease 33 percent Residential: Decrease 71 percent **Airspace:** • No change to general land use patterns, land ownership. No change to management of lands or special use land areas beneath the airspace. • No impact to community land uses.	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Decrease 62 percent Residential: No change *Scenario 2* Overall: Decrease 49 percent Residential: Decrease 100 percent **Airspace:** • No change to general land use patterns, land ownership. No change to management of lands or special use land areas beneath the airspace. • No impact to community land uses.	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Increase 7 percent Residential: No change *Scenario 2* Overall: Increase 15 percent Residential: No change *Scenario 3* Overall: Increase 25 percent Residential: No change **Airspace:** • No change to general land use patterns, land ownership. No change to management of lands or special use land areas beneath the airspace. • No impairment to Wilderness Areas, WSAs, or WSRs. • No impact to community land uses.	**Base:** • No change to the existing airfield-related APZs and Clear Zones. • Land area affected by noise levels equal to or greater than 65 dB DNL: *Scenario 1* Overall: Decrease 41 percent Residential: Decrease 86 percent *Scenario 2* Overall: Increase 12 percent Residential: Decrease 53 percent *Scenario 3* Overall: Increase 62 percent Residential: Decrease 4 percent **Airspace:** • No change to general land use patterns land ownership. No change to management of lands or special use land areas beneath the airspace. • No impact to community land uses.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.11**	**HL3.11**	**JX3.11**	**Mc3.11**	**MH3.11**	**SH3.11**
Socioeconomics	**Base:** • Scenario 1 – no net change in military personnel numbers. No change to military payrolls; no impacts to regional employment, income, or regional housing market. • Scenario 2 – increase of 266 military personnel; annual increase in salaries of approximately $3.4 million. • Scenarios 1 and 2 – $2.4 million in expenditures for proposed construction and modification. **Airspace:** • Not applicable.	**Base:** • Scenario 1 – decrease of 1,157 military personnel; annual decrease of $25.9 million in salaries. • Scenario 2 – decrease of 572 military personnel; annual decrease of approximately $12.9 million in salaries. • Scenario 3 – increase of 13 military personnel; annual increase of approximately $0.3 million in salaries. • Scenario 1 –$18.1 million, Scenario 2 –$30.4 million, and Scenario 3 –$40.8 million in proposed construction expenditures. **Airspace:** • Not applicable.	**Base:** • Scenario 1 – no net change in military personnel numbers. No change to military payrolls; no impacts to regional employment, income, or regional housing market. • Scenario 2 – increase of 249 military personnel; annual increase of approximately $3.4 million in salaries. • Scenarios 1 and 2—$0.4 million in proposed modification expenditures. **Airspace:** • Not applicable.	**Base:** • Scenario 1 – decrease of 371 military personnel; decrease of approximately $4.5 million in salaries. • Scenario 2 – no net change in military personnel numbers. No change to military payrolls; no impacts to regional employment, income, or regional housing market. **Airspace:** • Not applicable.	**Base:** • Scenario 1 – increase of 585 military personnel; annual increase of approximately $22.7 million in salaries. Estimated increase of 240 jobs; estimated $10.8 million in labor income. • Scenario 2 – increase of 1,170 military personnel; annual increase of approximately $45.3 million in salaries. Estimated increase of 479 jobs; estimated $21.6 million in labor income. • Scenario 3–increase of 1,755 military personnel; annual increase of approximately $68.0 million in salaries. • Scenario 1 –$16.9 million, Scenario 2 –$36.4 million, and Scenario 3 –$51.5 million in proposed construction expenditures. **Airspace:** • Not applicable.	**Base:** • Scenario 1 – decrease of 1,320 military personnel; annual decrease of approximately $50.0 million in salaries. • Scenario 2 – decrease of 735 military personnel; annual decrease of approximately $27.1 million in salaries. • Scenario 3–decrease of 150 military personnel; annual decrease of approximately $4.3 million in salaries. • Scenario 1–$22.2 million, Scenario 2–$22.3 million, and Scenario 3–$22.5 million in proposed construction expenditures. **Airspace:** • Not applicable.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.12**	**HL3.12**	**JX3.12**	**Mc3.12**	**MH3.12**	**SH3.12**
Environmental Justice/Protection of Children	**Base:** • For both scenarios, continued disproportionate effects on low-income individuals would occur. • Effects on minority populations would decrease relative to proportions around the base, but would remain disproportionate compared to county and state levels. **Airspace:** • When compared to baseline proportional distribution of minority and low-income populations across Winooski and South Burlington, there would be no disproportionate impacts; nor would there be any adverse or special health or safety risks to children.	**Base:** • Under Scenarios 1 or 2, no disproportionate effects on minority and low income individuals would occur. • For Scenario 3, slight disproportionate effects on low-income would result, but would still be less than baseline levels. **Airspace:** • No disproportionate impacts related to environmental justice are anticipated, nor would there be any adverse or special health or safety risks to children.	**Base:** • For both scenarios, no disproportionate effects on minority populations and low income individuals would occur. **Airspace:** • No disproportionate impacts related to environmental justice are anticipated, nor would there be any adverse or special health or safety risks to children.	**Base:** • For both scenarios, continued disproportionate effects on minority and low-income individuals would occur. **Airspace:** • When compared to baseline proportional distribution of minority and low-income populations across Richland County, there would be no disproportionate impacts; nor would there be any adverse or special health or safety risks to children.	**Base:** • For all scenarios, no disproportionate effects on minority and low income individuals would occur. **Airspace:** • No disproportionate impacts related to environmental justice are anticipated, nor would there be any adverse or special health or safety risks to children.	**Base:** • For all scenarios, continued disproportionate effects on minority and low-income individuals would occur. **Airspace:** • When compared to baseline proportional distribution of minority and low-income populations across the City of Sumter and Sumter County, there would be no disproportionate impacts; nor would there be any adverse or special health or safety risks to children. • Disproportionate impacts related to environmental justice are anticipated on lands under Gamecock airspace.

Table 13-1. Comparative Summary of Environmental Consequences (con't)						
	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.13**	**HL3.13**	**JX3.13**	**Mc3.13**	**MH3.13**	**SH3.13**
Community Facilities and Public Services	**Base:** • Under Scenario 1, there would be no impacts to community facilities and services. • Under Scenario 2, there would be an increase in demand for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services. **Airspace:** • Not applicable.	**Base:** • For all scenarios, demand for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services would decrease or remain similar to that under baseline conditions. **Airspace:** • Not applicable.	**Base:** • Scenario 1 would result in no change in demand for community facilities and services. • Scenario 2 would result in a 24 percent increase in demand for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services. **Airspace:** • Not applicable.	**Base:** • Under Scenarios 1 and 2, there would be a 24 percent overall decrease and no change, respectively, in the demand for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services. **Airspace:** • Not applicable.	**Base:** • Adequate capacity to accommodate additional growth under all scenarios for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services. **Airspace:** • Not applicable.	**Base:** • Under Scenarios 1, 2, and 3, there would be a decrease in demand for potable water, electricity, and natural gas; wastewater and solid waste generation; and education services **Airspace:** • Not applicable.

Table 13-1. Comparative Summary of Environmental Consequences (con't)

	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.14**	**HL3.14**	**JX3.14**	**Mc3.14**	**MH3.14**	**SH3.14**
Ground Traffic and Transportation	**Base:** • Construction traffic could result in negligible short term increases in the use of on-base roadways. • Under Scenario 1, no change in travel demand for the base. • Under Scenario 2, increases in peak period travel demand by 24 percent. • Under Scenario 2, increase in traffic volume would exceed primary Level of Service threshold by 12.2 percent but would not exceed the secondary threshold for capacity. **Airspace:** • Not applicable.	**Base:** • Construction traffic could result in minor short term increases in the use of on-base roadways. • Under Scenarios 1 and 2, vehicle trips to and from the base during morning and evening peak periods would decrease. • No change under Scenario 3. **Airspace:** • Not applicable.	**Base:** • Construction traffic could result in negligible short term increases in the use of some on-base roadways under both scenarios. • Scenario 1 would result in no change in travel demand for the base. • Under Scenario 2, increase in traffic volume would exceed primary Level of Service threshold by 12.2 percent but would not exceed the secondary threshold for capacity. **Airspace:** • Not applicable.	**Base:** • Construction traffic could result in minor short term increases in the use of on-base roadways under both scenarios. • Scenario 1 would reduce peak period travel demand by 24 percent. • Scenario 2 would result in no change in travel demand for the base. **Airspace:** • Not applicable.	**Base:** • Construction traffic could result in minor short term increases in the use of on-base roadways under all scenarios. • Under Scenario 1, increases in traffic volume would exceed primary Level of Service threshold by 1.2 percent but would not exceed the secondary threshold for capacity. • Under Scenario 2, increases in traffic volume would exceed primary Level of Service threshold by 14.2 percent but would not exceed the secondary threshold for capacity. • Under Scenario 3, increases in traffic volume would exceed primary Level of Service threshold by 27.2 percent and would exceed the secondary threshold for capacity by 12.3 percent. **Airspace:** • Not applicable.	**Base:** • Construction traffic could result in minor short term increases in the use of on-base roadways under all scenarios. • Scenario 1 would reduce peak period travel demand by 15 percent. • Scenario 2 would reduce peak period travel demand by 8 percent. • Scenario 3 would decrease peak period travel demand by 2 percent. **Airspace:** • Not applicable.

Table 13-1. Comparative Summary of Environmental Consequences (con't)						
	Burlington AGS ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-16s***	***Hill AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 48 F-16s***	***Jacksonville AGS*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 18 F-15Cs***	***McEntire JNGB*** ***ANG Scenario 1 = 18 F-35As*** ***ANG Scenario 2 = 24 F-35As*** ***Replace 24 F-16s***	***Mountain Home AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace None;*** ***Based F-15E/F-15SGs Remain***	***Shaw AFB*** ***ACC Scenario 1 = 24 F-35As*** ***ACC Scenario 2 = 48 F-35As*** ***ACC Scenario 3 = 72 F-35As*** ***Replace 72 F-16s***
Location in EIS:	**BR3.15**	**HL3.15**	**JX3.15**	**Mc3.15**	**MH3.15**	**SH3.15**
Hazardous Materials and Waste	**Base:** • Quantities and types of hazardous materials needed for maintenance would be less than those currently generated by maintaining F-16 and F-15 aircraft. • Operations involving hydrazine, cadmium, and hexavalent chromium primer, and various heavy metals have been eliminated or greatly reduced for the F-35A. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect known ERP locations. **Airspace:** • Not applicable.	**Base:** • Quantities and types of hazardous materials needed for maintenance would be less than those currently generated by maintaining F-16 and F-15 aircraft. • Operations involving hydrazine, cadmium, and hexavalent chromium primer, and various heavy metals have been eliminated or greatly reduced for the F-35A. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect known ERP locations. **Airspace:** • Not applicable.	**Base:** • Quantities and types of hazardous materials needed for maintenance would be less than those currently generated by maintaining F-16 and F-15 aircraft. • Operations involving cadmium, and hexavalent chromium primer, and various heavy metals have been eliminated or greatly reduced for the F-35A. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect known ERP locations. **Airspace:** • Not applicable.	**Base:** • Quantities and types of hazardous materials needed for maintenance would be less than those currently generated by maintaining F-16 and F-15 aircraft. • Operations involving hydrazine, cadmium, and hexavalent chromium primer, and various heavy metals have been eliminated or greatly reduced for the F-35A. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect known ERP locations. **Airspace:** • Not applicable.	**Base:** • Aircraft maintenance activities would increase and, therefore, use of hazardous material quantities would also rise. • The overall waste streams are expected to increase over the amounts currently generated due to the overall increase of number of aircraft. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect active ERP locations. **Airspace:** • Not applicable.	**Base:** • Quantities and types of hazardous materials needed for maintenance would be less than those currently generated by maintaining F-16 and F-15 aircraft. • Operations involving hydrazine, cadmium, and hexavalent chromium primer, and various heavy metals have been eliminated or greatly reduced for the F-35A. • Any structures proposed for upgrade or retrofit would be inspected for ACM and LBP according to established procedures. • Neither upgrades to existing facilities nor future operations are expected to affect known ERP locations. **Airspace:** • Not applicable.

United States Air Force
F-35A Operational Basing
Revised Draft Environmental Impact Statement

This volume contains the printed Executive Summary of the Revised Draft EIS for the F-35A Operational Basing at six alternative locations: Burlington Air Guard Station (AGS), Vermont; Hill Air Force Base (AFB), Utah; Jacksonville AGS, Florida; McEntire Joint National Guard Base (JNGB), South Carolina; Mountain Home AFB, Idaho; and Shaw AFB, South Carolina. Attached to this Executive Summary is a CD (located in the pocket below) containing the entire Revised Draft EIS and appendices (including comments and responses).

In order to view the Revised Draft EIS and appendices, you will need Adobe Acrobat® Reader. If you do not already have Adobe Acrobat® Reader, you can download it from www.adobe.com. To view:

- Insert the CD into the computer's CD/DVD drive.
- Open the CD/DVD drive's directory and double-click on the file named F-35A Operational Basing Revised Draft EIS.pdf.
- Navigate by scrolling through the document, click on a heading in the Table of Contents, or click on a bookmark that appears on the left of the document window.

The CD files are read-only which means you can view and/or print them from the CD. In addition, the document can be viewed and downloaded from the World Wide Web at http://www.accplanning.org. Public involvement is a cornerstone of the National Environmental Policy Act (NEPA) process. All comments received during the 30-day public comment and review period are included in Volume II of the Final EIS. Responses to comments received for the Draft EIS are also included and forms part of the information used in the Air Force decision-making process.

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Privacy Advisory for Revised Draft Environmental Impact Statement (EIS)

Any letters or written comments received on this Revised Draft EIS may be published in the Final EIS. As required by law, the Air Force will consider those comments in the Final EIS which will be made available to the public. Any personal information provided will be used only to identify your desire to make a comment during the public availability period or to fulfill a request for copies of the EIS. Private address information provided with comments will be used solely to develop a mailing list for the Final EIS distribution and will not be otherwise released.